

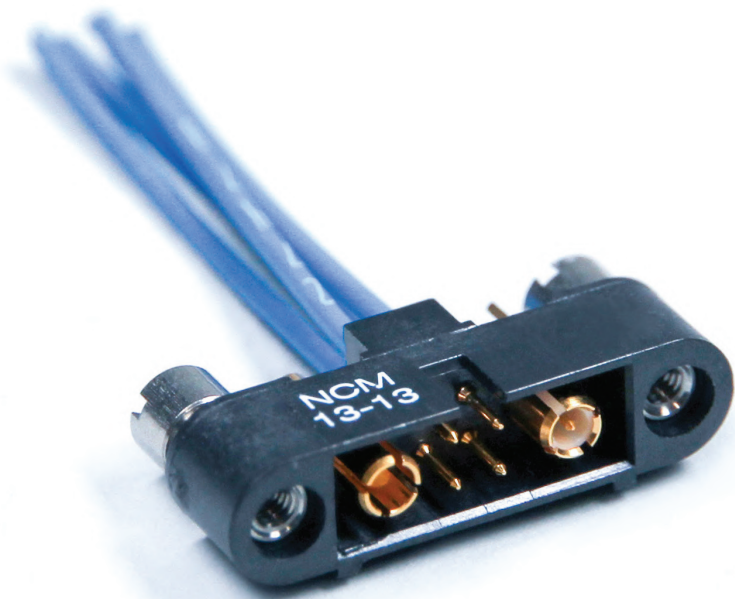


CMM

MIL55302

SPECIFICATIONS

MODULAR
CONNECTOR



HARSH
ENVIRONMENT

2mm
pitch

CMM Series Micro-connectors

NICOMATIC specializes in the design, development and manufacture of electronic connectors.

The **CMM MICRO CONNECTOR** interconnection system is a 2mm pitch connector (square matrix) with proven **high reliability under the most extreme environmental conditions**:

- Flexible architecture: "Board to Board", "Board toWire" and "Wire toWire" configurations
- Modular and hybrid design: mixed layout full option with Low Frequency – LF (over 5 Amp) – and High Frequency – HF - (over 11 GHz) and High Power - HP - (over 30 Amp)
- High reliability contact design & High performance under harsh use conditions
- Secure: integral jacking mechanism or locking by spring latch

The CMM MICRO CONNECTOR is a complete and standard range of connectors:

- CMM 100 series: 1 row – from 2 to 25 LF contacts
- CMM 200 series: 2 rows – from 4 to 50 LF contacts
- CMM 220 series: 2 rows – from 4 to 60 LF contacts, or up to 15 HF or HP contacts (series 30)
- CMM 320 series: 3 rows – from 6 to 120 LF contacts, or up to 20 HF or HP contacts (series 30)
- CMM 340 series: 3 rows – min. 6 LF contacts and up to 64 HF or HP contacts (series 22)

Direct benefits:

- Space saving: - 40% in surface and over - 60% in volume
- Weight saving: - 20 to - 50% vs. usual solution for same functionalities
- Reduce number of connectors: 2 or 3 connectors in 1 thanks to a modular concept
- Cost effective solution: custom connector assembly from standard components
- Proven success stories in on-board electronic systems
- Full traceability with EN9100:2003
- **Short lead time: 1 week express service**, Premium service, Fast sampling and prototyping
- **Online services** (www.nicomatic.com): Free use of My Niomatic service (2D & 3D drawings), automatic part number & mating-half configurators, technical support .

The CMM has been developed for the aerospace, avionics, instrumentation & control, defence and transportation markets, with applications that include IFES, HUDs, flight controls, FADEC units, radars, missiles, electro-optical sighting systems, satellites, mobile radios, power supplies, UAVs and engine controls. It is also used in a growing number of medical, and telecom applications.



Dimension Tables

CMM 100/200 SERIES in male & female styles for LF contacts

CMM SERIES 100 & 200 Male	LF contacts number series 100	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
	LF contacts number series 200	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	
	Length in mm	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
	Length in mm (Strap)	B	6,7	8,7	10,7	12,7	14,7	16,7	18,7	20,7	22,7	24,7	26,7	28,7	30,7	32,7	34,7	36,7	38,7	40,7	42,7	44,7	46,7	48,7	50,7	52,7
	Length in mm	C	7,4	9,4	11,4	13,4	15,4	17,4	19,4	21,4	23,4	25,4	27,4	29,4	31,4	33,4	35,4	37,4	39,4	41,4	43,4	45,4	47,4	49,4	51,4	53,4
	Length C with Latches fitted		7,8	9,8	11,8	13,8	15,8	17,8	19,8	21,8	23,8	25,8	27,8	29,8	31,8	33,8	35,8	37,8	39,8	41,8	43,8	45,8	47,8	49,8	51,8	53,8

CMM SERIES 100 & 200 Female	LF contacts number series 100		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
	LF contacts number series 200		4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	
	Length in mm		A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
	Length in mm		B	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53

LF CONTACTS REFERENCE MARK NUMBER FOR CMM SERIES 200 Male & Female	D	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	F	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	G	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50

CMM 220 SERIES in male & female styles for LF contacts

CMM SERIES 220 Male & Female	LF contacts number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	
	Distance between axis	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58
		B	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65
	Length in mm	C	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
	LF contacts reference mark number	D	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
		E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
		F	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		G	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60

CMM 220 SERIES in male & female styles for HF/HP contacts

CMM 220 Male & Female Special contacts only	Special contacts number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Distance between axis	A	4	8	12	16	20	24	28	32	36	40	44	48	52	56
		B	13	17	21	25	29	33	37	41	45	49	53	57	61	65
	Length in mm	C	18	22	26	30	34	38	42	46	50	54	58	62	66	70

CMM 320 SERIES in male & female styles for LF contacts

CMM SERIES 320 Male & Female	LF contacts number	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120	
	Distance between axis	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78
		B	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87
	Length in mm	C	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87	89	91	93
	LF contacts reference mark number	D	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
		E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		F	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
		G	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80
		H	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81
	J	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120	

CMM 340 SERIES in male & female styles for HF/HP contacts

CMM 340 Male & Female Special contacts only	Special contacts number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	
	Distance between axis	A	2,5	5	7,5	10	12,5	15	17,5	20	22,5	25	27,5	30	32,5	35	37,5	40	42,5	45	47,5	50	52,5	55	57,5	60	62,5	65	67,5	70	72,5	75	77,5
		B	12,5	15	17,5	20	22,5	25	27,5	30	32,5	35	37,5	40	42,5	45	47,5	50	52,5	55	57,5	60	62,5	65	67,5	70	72,5	75	77,5	80	82,5	85	87,5
	Length in mm	C	18,5	21	23,5	26	28,5	31	33,5	36	38,5	41	43,5	46	48,5	51	53,5	56	58,5	61	63,5	66	68,5	71	73,5	76	78,5	81	83,5	86	88,5	91	93,5

CMM Specifications (with LF contacts)

MATERIALS

INSULATOR: Special PPS (Polyphenylene Sulfide Fiberglass filled thermoplastic) UL 94-V0

- Radiation resistance
- No humidity absorption
- Oxygen free

Note : PPS characteristics are recognized for space applications

P.C. LF CONTACTS :

Male:

Tail : copper alloy / Ni + Au flash 0,1µ
Contact area : copper alloy / Ni + Au > 1µ

Female:

Body : copper alloy / Ni + Au 0,2 µ
Socket : beryllium copper / Ni + Au > 1,25µ

CRIMP LF CONTACTS :

Male:

Body : copper alloy / Ni + Au > 1µ

Female:

Body : copper alloy / Ni + Au > 0,2 µ
Socket : beryllium copper / Ni + Au > 1,25µ

FIXING HARDWARE:

- Jackscrew: Stainless steel.
- Latch : Beryllium copper/plated nickel (CMM 100/200 series only)

ELECTRICAL

- | | |
|----------------------------------|--------------------------------------|
| • All contacts | 3 A max. @ 25°C
2.2 A max. @ 85°C |
| • Working voltage (sea level) | Tested at 800 V DC |
| • Proof voltage | Tested at 1 200 V DC |
| • Contact resistance (initially) | max. 10 mΩ |
| • Insulation resistance | 1 000 MΩ min. |

MECHANICAL

- | | |
|--|-----------------------------------|
| • Mechanical operations | Up to 2500 cycles |
| • Contact insertion and withdrawal force | 2 N max. / 0.2 N min. per contact |
| • Contact retention in insulator | 10 N min. |
| • Contact replacement in insulator | 1-3 cycles (Crimp contacts only) |

ENVIRONMENTAL

- | | |
|-----------------------|---|
| • Temperature cycling | From - 60°C to + 260°C
Reflow solder process compatible (+260°C) |
| • Vibration severity | 0.75 mm, 10 g RMS 6 hours long random with superimposed sinusoid. No intermittencies measured when using an H.S.L.I (High Speed Logic Interrupt) detector with a trip threshold of 2 ns.
MIL-DTL-55302F Test Condition III [147.1 m/s2 (15 gn) peak] |
| • Shock severity | 100 g for 6 ms |
| • Solvent resistance | |

Note :

The CMM micro-connectors are designed to meet or exceed the relevant electrical and environmental performances described in MIL-DTL-55302F & BS-9525-F0033 standards.

HF / HP contacts specifications

MATERIALS

• Spring loaded parts	Be/Cu gold plated
• Other metal parts	Copper alloy
• Insulator	PTFE (HF)
• Retaining clip	Be/Cu Ni plated

MECHANICAL

• Mechanical operations	Up to 500 cycles
• Insertion force	From 0.60 to 5 N per contact
• Withdrawal force	From 0.50 to 2 N per contact
• Secure overlapping	1.30 mm
• Contact replacement in insulator	50 cycles for HF / HP 30 series (5 cycles for HF / HP 22 series)

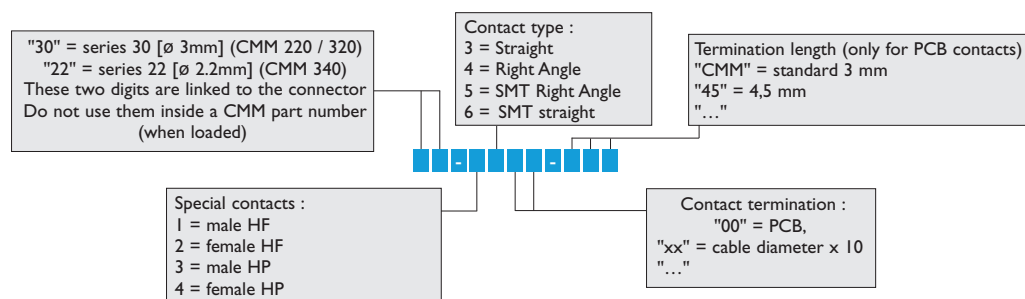
ELECTRICAL

High Power (HP) Contact	Series 30	Series 22	High Frequency (HF) Contact
Intensity per contact	35A	20A	Impedance 50 Ω / 75 Ω
Intensity per connector	20A	10A	Insulation resistance 10 ⁶ Ω
Dielectric Voltage (sea level)			Insulation between 2 contacts -75 dB (depending on cable)
Withstanding voltage Rated voltage	1500VRMS 500 VRMS	900VRMS 300 VRMS	Withstanding voltage (sea level) 1000 VRMS
High Altitude 70000 ft :			Rated voltage 80 v AC / 500 mA
Withstanding voltage	360 VRMS	300 VRMS	Contacts HF on cable
Rated voltage	120 VRMS	100 VRMS	Frequency range up to
Contact resistance max. 3 m Ω			Series 30 20 GHz
			Serie 22 6 GHz

ENVIRONMENTAL

• Temperature cycling	From -60°C to +260°C
• Salt spray test	96 hrs *
• Humidity test	56 days @ 90% humidity

HF / HP CONTACTS PART NUMBERING



Important notice:

According to the routines test other than MIL our technical features for CMM Micro-connectors reach a higher result. For more information, please feel in the contact form on the website.

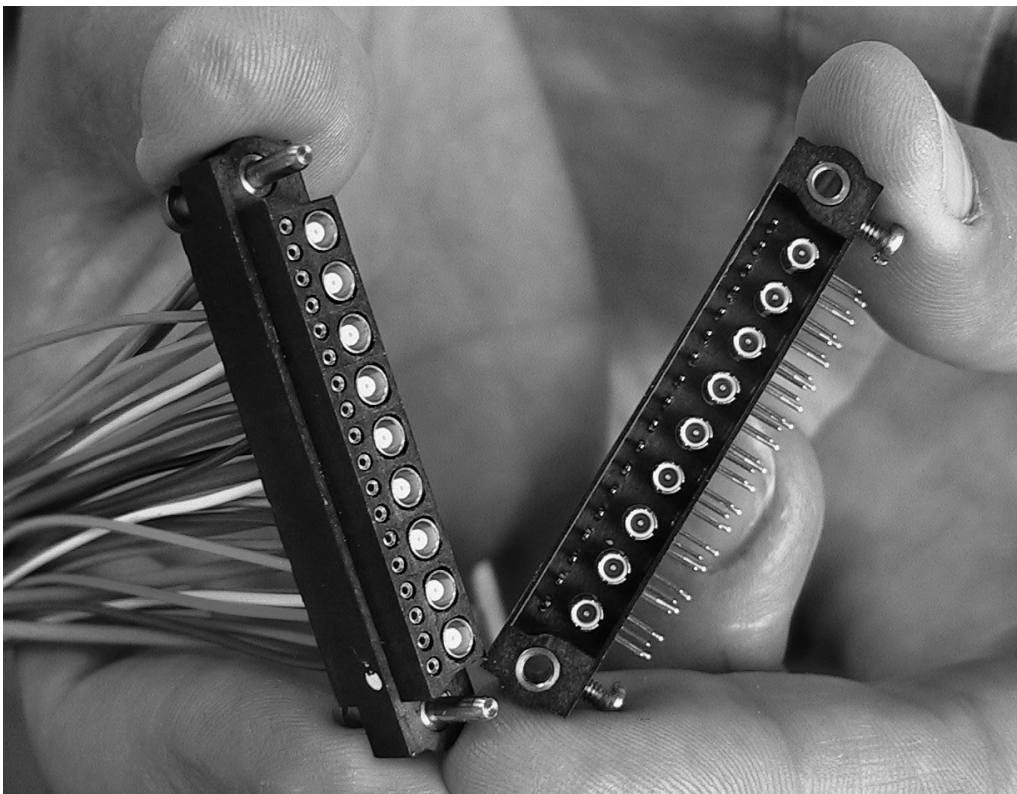
For example:

- Mechanical operations: up to 5 000 cycles
- High temperature test: 1 000H at 250°C
- Application with LVDS signal @ 400 MHz, impedance 100 Ohm
- High speed: USB, IGB/s Ethernet...

* without fixings

HIGHLIGHT ON CMM CONNECTOR BENEFITS

- **Unlimited style of connector:**
 - **Mixed-layout:** High, Low frequency & High power in 1 connector
 - **PCB solder, SMT, press fit, crimp contacts**
 - **Board to board, board to wire, wire to wire connections**
 - **Very small footprint: 2 mm pitch (saves up to 60% space & 50% weight over conventional connectors)**
- **Meets or exceeds the relevant electrical & environmental performances described in MIL-DTL-55302F & BS-9525-F0033 standards**
- **Excellent mechanical & environmental characteristics**
- **Built-in jackscrews for high vibrations**
- **Resistance to solvents, radiations & oxygen free**
- **Allows infrared, wave or vapour phase soldering**
- **High reliability contact design: up to 2 500 cycles**
- **RoHS & Whiskers free (all contacts are gold plated)**
- **Short lead time: 1 week delivery service**
- **100% quality control**
- **Proven track record in defense, aerospace & railway as well as other high reliability or technology field applications**
- **Connector housing marking for full traceability**
- **Large range of accessories & tools**



LF : low frequency contacts

PRESENTATION

Male						
Female						
	Straight PCB Type Y	90° PCB Type V	Straight SMT Type T	90° SMT Type R	Crimp Type S - C	Straight PCB Type PF Press fit

INFORMATION TABLE

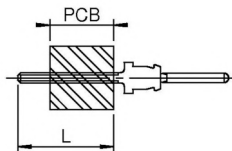
CMM RANGE		USE												
		STRAIGHT ON PCB						90° ON PCB		STRAIGHT SMT		90° SMT	CRIMP	
100/200	Male	Y L=3,0	YL L=4,5	YM L=5,1	YX L=9,1			V L=3,0	VL L=4,5	T L=2,25	TL L=3,35	R L=0,9	C Gauge 22	S Gauge 24-28
	Female	Y L=3,0	YL L=4,5			YC L=1,2	PF Press fit	V L=3,0	VL L=4,5	T L=2,25	TL L=3,35	R L=0,9	C Gauge 22	S Gauge 24-28
220	Male	Y L=3,0	YL L=4,5	YM L=5,1	YX L=9,1			V L=3,0	VL L=4,5	T L=2,25	TL L=3,35	R L=0,9	C Gauge 22	S Gauge 24-28
	Female	Y L=3,0	YL L=4,5			YC L=1,2	PF Press fit	V L=3,0	VL L=4,5	T L=2,25	TL L=3,35	R L=0,9	C Gauge 22	S Gauge 24-28
320	Male	Y L=3,0	YL L=4,5	YM L=5,1	YX L=9,1			V L=3,0	VL L=4,5			R L=0,9	C Gauge 22	S Gauge 24-28
	Female	Y L=3,0	YL L=4,5				PF Press fit	V L=3,0	VL L=4,5				C Gauge 22	S Gauge 24-28
340	Male	Y L=3,0	YL L=4,5	YM L=5,1	YX L=9,1			V L=3,0	VL L=4,5				C Gauge 22	S Gauge 24-28
	Female	Y L=3,0	YL L=4,5				PF Press fit	V L=3,0	VL L=4,5				C Gauge 22	S Gauge 24-28

L=6,50 / 8,00 / 10,50 / 12,00 / 14,50 /
16,00 mm upon request (only for
straight on PCB male contacts)

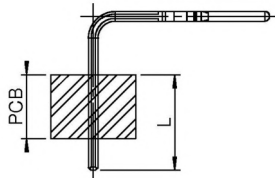
Standard contact

Any other type of contact upon request only

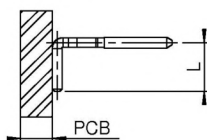
Straight on PCB



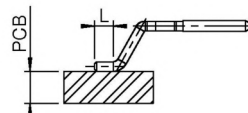
90° on PCB



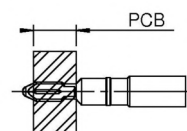
SMT straight on PCB



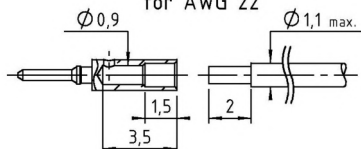
SMT 90° on PCB



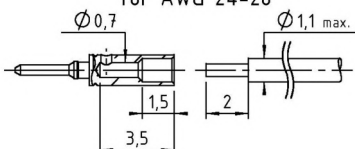
Pressfit
Straight on PCB



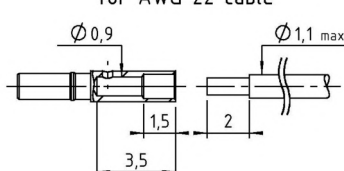
Ref : 12960
Male crimp contact "C"
for AWG 22



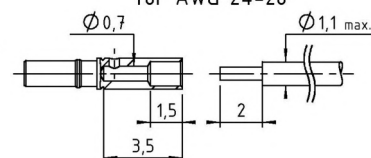
Ref : 12969
Male crimp contact "S"
for AWG 24-28



Ref : C13064-P
Female crimp contact "C"
for AWG 22 cable



Ref : C12468
Female crimp contact "S"
for AWG 24-28



HF : high frequency contacts (series 30)

PRESENTATION

Male								
Female								
	Straight PCB	90° PCB	Straight SMT	90° SMT Card edge	Straight Crimp	90° Crimp	Straight solder	90° solder
	Type D				Type E			

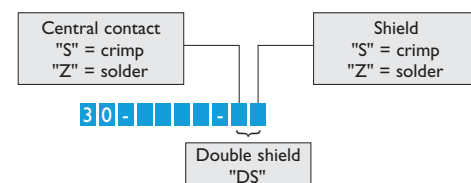
INFORMATION TABLE

CMM RANGE		TYPICAL USE										
		TYPE OF CONTACTS TO BE USED IN THE CMM CONNECTOR WITH CAVITIES FOR HF/HP CONTACTS ONLY										
		TYPE D FOR SPECIAL CONTACTS ON PCB (Eg.221D00F22-00 nbr of special contact-1300CMM)						TYPE E FOR SPECIAL CONTACTS ON CABLE				
		Straight on PCB		90° on PCB		Straight SMT	90° SMT Card edge		Straight Crimp	90° Crimp	Straight solder	90° solder
100/200	Male											
	Female											
220	Male	30-1300-CMM L=3,0	30-1300-45 L=4,5	30-1400-CMM L=3,0	30-1400-45 L=4,5	30-1600	30-1500-CMM no LF contact	30-1500-12	30-13XX-SS 30-13XX-DS xx=cable type	30-14XX-ZS 30-14XX-DS xx=cable type	30-13XX-ZZ xx=cable type	30-14XX-ZZ xx=cable type
	Female	30-2300-CMM L=3,0	30-2300-45 L=4,5	30-2400-CMM L=3,0	30-2400-45 L=4,5	30-2600			30-23XX-SS 30-23XX-DS xx=cable type	30-24XX-ZS 30-24XX-DS xx=cable type	30-23XX-ZZ xx=cable type	30-24XX-ZZ xx=cable type
320	Male	30-1300-CMM L=3,0	30-1300-45 L=4,5	30-1400-CMM L=3,0	30-1400-45 L=4,5			30-1500-12	30-13XX-SS 30-13XX-DS xx=cable type	30-14XX-ZS 30-14XX-DS xx=cable type	30-13XX-ZZ xx=cable type	30-14XX-ZZ xx=cable type
	Female	30-2300-12 L=3,0	30-2300-14 L=4,5	30-2400-CMM L=3,0	30-2400-45 L=4,5				30-23XX-SS 30-23XX-DS xx=cable type	30-24XX-ZS 30-24XX-DS xx=cable type	30-23XX-ZZ xx=cable type	30-24XX-ZZ xx=cable type
340	Male											
	Female											

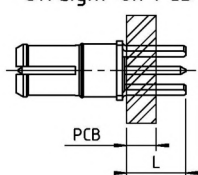
Standard contact
Any other type of contact upon request only

XX = 12, 20, 24, 26
Eg. 24 = cable Ø 2,4
XX = 20 or 26 for DS cable

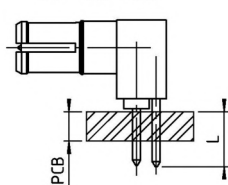
XX = 47, 85
Eg. 47 for UT47 cable



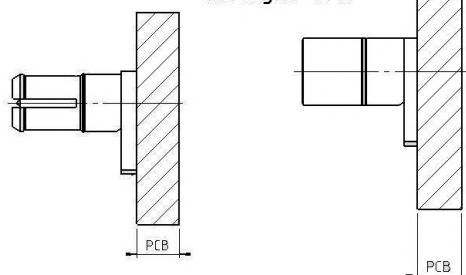
Straight on PCB



90° on PCB



Straight SMT



HP : high power contacts (series 30)

PRESENTATION

Male									
Female									
	Straight PCB	90° PCB	Straight SMT	90° SMT	90° SMT Card edge	Straight Crimp	90° Crimp	Straight solder	90° solder
	Type D					Type E			

INFORMATION TABLE

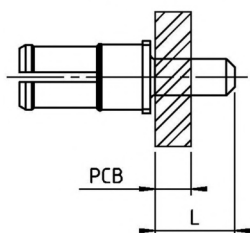
CMM RANGE		TYPICAL USE										
		TYPE OF CONTACTS TO BE USED IN THE CMM CONNECTOR WITH CAVITIES FOR HF/HP CONTACTS ONLY										
		TYPE D FOR SPECIAL CONTACTS ON PCB						TYPE E FOR SPECIAL CONTACTS ON CABLE				
		Straight on PCB	90° on PCB	Straight SMT	90° SMT	90° SMT Card edge		Straight Crimp	90° Crimp	Straight solder	90° solder	
100/200	Male											
	Female											
220	Male	30-3300-CMM L=3,0	30-3300-45 L=4,5	30-3400-CMM L=3,0	30-3400-45 L=4,5	30-3600	30-3500	30-3500-CMM no LF contact	30-3500-12	30-33XX		30-33XX
	Female	30-4300-CMM L=3,0	30-4300-45 L=4,5	30-4400-CMM L=3,0	30-4400-45 L=4,5	30-4600	30-4500			30-43XX		30-43XX
320	Male	30-3300-CMM L=3,0	30-3300-45 L=4,5	30-3400-CMM L=3,0	30-3400-45 L=4,5				30-3500-12	30-33XX		30-33XX
	Female	30-4300-12 L=3,0	30-4300-14 L=4,5	30-4400-CMM L=3,0	30-4400-45 L=4,5					30-43XX		30-43XX
340	Male											
	Female											

Standard contact
Any other type of contact upon request only

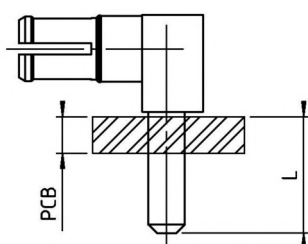
XX = 05, 08...
Eg. 08 for 8A

Please refer
to page 94

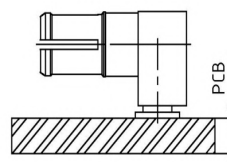
Straight on PCB



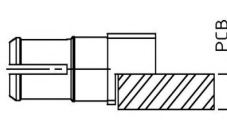
90° on PCB



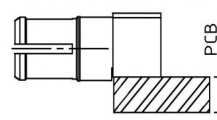
90° SMT



90° SMT Card edge
(without LF contacts)



90° SMT Card edge
(with LF contacts)



HF : high frequency contacts (series 22)

PRESENTATION

Male								
Female								
	Straight PCB	90° PCB	Straight SMT	90° SMT	Straight Crimp	90° Crimp	Straight solder	90° solder
	Type D				Type E			

INFORMATION TABLE

CMM RANGE		TYPICAL USE									
		TYPE OF CONTACTS TO BE USED IN THE CMM CONNECTOR WITH CAVITIES FOR HF/HP CONTACTS ONLY									
		TYPE D FOR SPECIAL CONTACTS ON PCB					TYPE E FOR SPECIAL CONTACTS ON CABLE				
		Straight on PCB		90° on PCB		Straight SMT	90° SMT	Straight Crimp	90° Crimp	Straight solder	90° solder
100/200	Male										
	Female										
220	Male										
	Female										
320	Male										
	Female										
340	Male	22-1300-12 L=3,0	22-1300-14 L=4,5	22-1400-12* 22-1400-22** L=3,0	22-1400-14* 22-1400-24** L=4,5			22-1312-ZS		22-1320-ZZ	
	Female	22-2300-12 L=3,0	22-2300-14 L=4,5	22-2400-12* 22-2400-22** L=3,0	22-2400-14* 22-2400-24** L=4,5			22-2312-ZS		22-2320-ZZ	

Standard contact

Any other type of contact upon request only

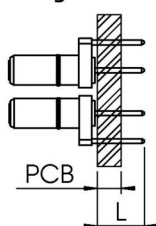
12 = cable Ø
1,2

20 = cable
Ø 2,0

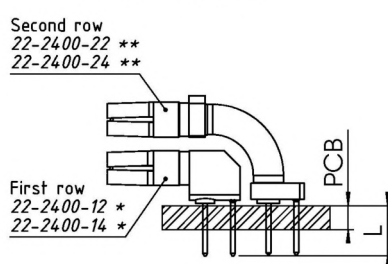
* First row : 22-1400-12 / 22-1400-14 / 22-2400-12 / 22-2400-14

** Second row : 22-1400-22 / 22-1400-24 / 22-2400-22 / 22-2400-24

Straight on PCB



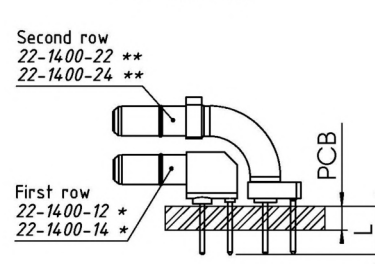
90° on PCB



When a two-row connector mixes a 22-2400-12 and a 22-2400-22 contact, the P/N of the HF contact changes to 2400-02.

When a two-row connector mixes a 22-2400-14 and a 22-2400-24 contact, the P/N of the HF contact changes to 2400-04.

90° on PCB



When a two-row connector mixes a 22-1400-12 and a 22-1400-22 contact, the P/N of the HF contact changes to 1400-02.

When a two-row connector mixes a 22-1400-14 and a 22-1400-24 contact, the P/N of the HF contact changes to 1400-04.

HP : high power contacts (series 22)

PRESENTATION

	Type D				Type E			
	Straight PCB	90° PCB	Straight SMT	90° SMT	Straight Crimp	90° Crimp	Straight solder	90° solder
Male								
Female								

INFORMATION TABLE

CMM RANGE		TYPICAL USE									
		TYPE OF CONTACTS TO BE USED IN THE CMM CONNECTOR WITH CAVITIES FOR HF/HP CONTACTS ONLY									
		TYPE D FOR SPECIAL CONTACTS ON PCB					TYPE E FOR SPECIAL CONTACTS ON CABLE				
		Straight on PCB		90° on PCB		Straight SMT	90° SMT	Straight Crimp	90° Crimp	Straight solder	90° solder
100/200	Male										
	Female										
220	Male										
	Female										
320	Male										
	Female										
340	Male	22-3300-12 L=3,0	22-3300-14 L=4,5	22-3400-12* 22-3400-22** L=3,0	22-3400-14* 22-3400-24** L=4,5			22-33XX		22-33XX	
	Female	22-4300-12 L=3,0	22-4300-14 L=4,5	22-4400-12* 22-4400-22** L=3,0	22-4400-14* 22-4400-24** L=4,5			22-43XX		22-43XX	

Standard contact

Any other type of contact upon request only

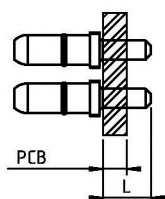
XX = 05, 08, 10
10 = 10A

Please refer
to page 102

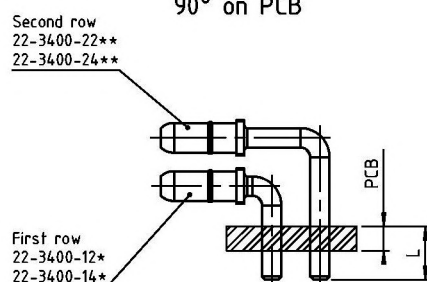
* First row : 22-3400-12 / 22-3400-14 / 22-4400-12 / 22-4400-14

** Second row : 22-3400-22 / 22-3400-24 / 22-4400-22 / 22-4400-24

Straight on PCB



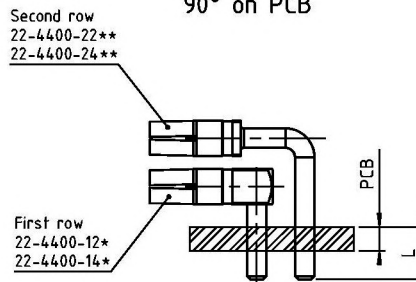
90° on PCB



When a two-row connector mixes a 22-3400-12 and a 22-3400-22 contact, the P/N of the HF contact changes to 3400-02.

When a two-row connector mixes a 22-3400-14 and a 22-3400-24 contact, the P/N of the HF contact changes to 3400-04.

90° on PCB

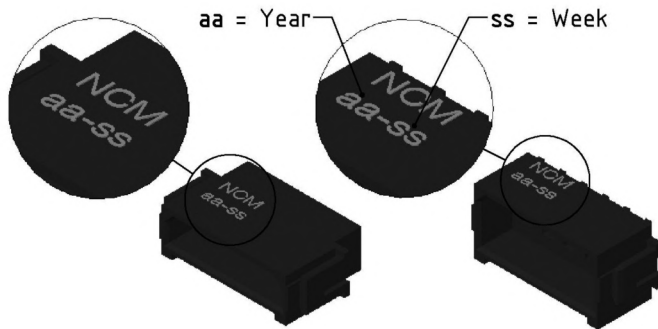


When a two-row connector mixes a 22-4400-12 and a 22-4400-22 contact, the P/N of the HF contact changes to 4400-02.

When a two-row connector mixes a 22-4400-14 and a 22-4400-24 contact, the P/N of the HF contact changes to 4400-04.

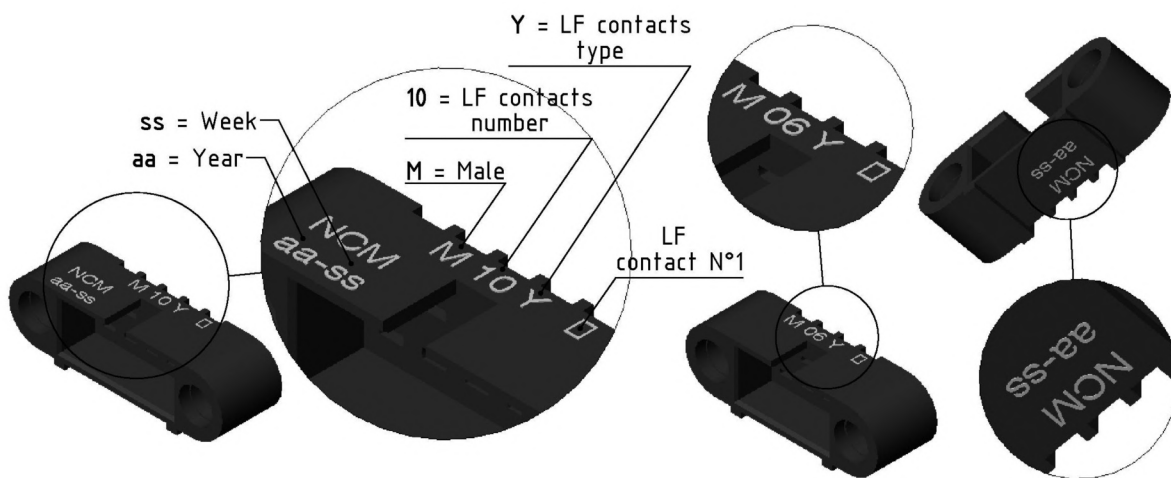
Male housing marking

CMM 100/200



Marking : NCM (Nicomatic) + date code (Lot number)

CMM 220



Marking 1 : NCM (Nicomatic) + date code (Lot number)
(LF contacts only) Connector P/N
LF contact number I

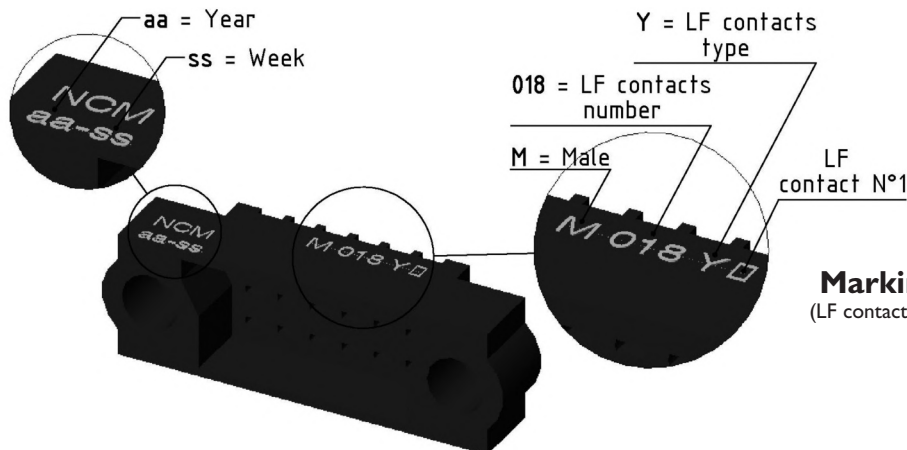
Marking on two faces if the number of LF contacts is < to 10.

Marking 2 : NCM (Nicomatic) + date code (Lot number) : CMM 220 mixed layout (LF + HF/HP)
(as for CMM 100/200)

CMM 220 with HF/HP contacts
CMM 220 with 04 LF contacts

Marking LF contacts type : Y-YL-V-VL-R-T-S-C

CMM 320/340



Marking 1 : NCM (Nicomatic)
(LF contacts only) / date code (Lot number)
Connector P/N
LF contact number I

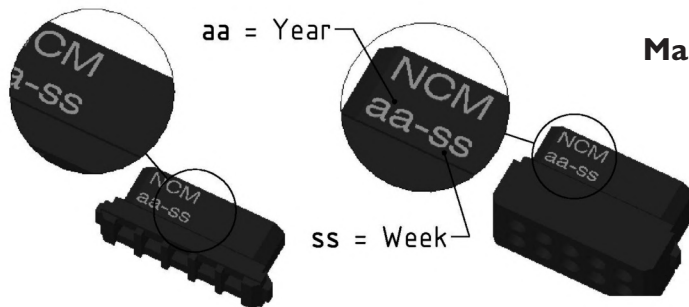
Marking 2 : NCM (Nicomatic) / date code (Lot number) : CMM 320 mixed layout
(as for CMM 100/200)

CMM 320 with HF/HP contacts
CMM 340

Marking LF contacts type : Y-YL-V-VL-S-C

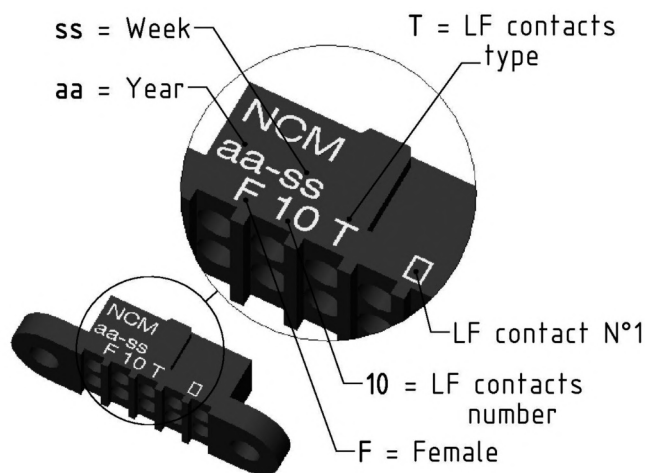
Female housing marking

CMM 100/200



Marking : NCM (Nicomatic) + date code (Lot number)

CMM 220



Marking 1 : NCM (Nicomatic) + date code (Lot number)
(LF contacts only) Connector P/N
LF contact number 1

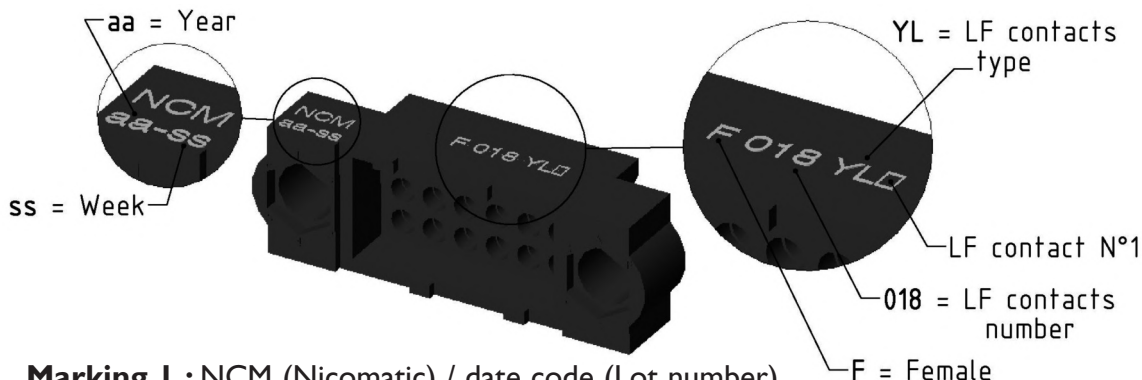
Marking on two faces if the number of LF contacts is < to 10.

Marking 2 : NCM (Nicomatic) + date code (Lot number) : CMM 220 mixed layout (LF + HF/HP)
(as for CMM 100/200)

CMM 220 with HF/HP contacts
CMM 220 with 04 LF contacts

Marking LF contacts type : Y-YL-V-VL-R-T-S-C-PF

CMM 320/340



Marking 1 : NCM (Nicomatic) / date code (Lot number)
(LF contacts only) Connector P/N
LF contact number 1

Marking 2 : NCM (Nicomatic) / date code (Lot number) : CMM 320 mixed layout HF/HP contacts
(as for CMM 100/200)

CMM 320 with HF/HP contacts
CMM 340

Marking LF contacts type : Y-YL-V-VL-S-C-PF

Nicomatic CMM part

Code with Low Frequency contacts only					Additional code for mixed-layout connector (HF/HP)		
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware	Number of HF/HP contacts pin 1 side (LF contact number 1)	Number of HF/HP contacts opposite to LF contact number 1	HF/HP Contact Type

n
n
n

-
y
y

z
z
-

1 row	10	1 male	Refer to table on page 7	02 to 25 (nn)	With Latch page 22	No HF / HP contacts	
		2 female			Without Latch		
2 rows	20	1 male	Refer to table on page 7	04 to 50 (nn)	With Latch page 22		
		2 female			Without Latch		

2 rows	22	1 male	Refer to table on page 7	04 to 60 (nn)	Refer to pages 43 to 46	Depends upon the number of LF contacts If use with shifted central key, please refer to page 38 HF / HP : 15 contacts max. Type of HF/HP contact : please refer to pages 8-9	Coaxmatic™ 30
		2 female					

3 rows	32	1 male	Refer to table on page 7	006 to 120 (nnn)	Refer to pages 69 to 74	Depends upon the number of LF contacts HF / HP : 20 contacts max. Type of HF/HP contact : please refer to pages 8-9	Coaxmatic™ 30
		2 female					

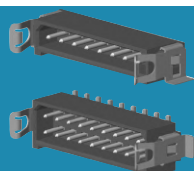
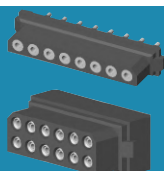
3 rows	34	1 male	Refer to table on page 7	Refer to the series 320 (nnn)	Refer to pages 69 to 74	Depends upon the number of LF contacts HF / HP : 64 contacts max. Type of HF/HP contact : please refer to pages 10-11	Coaxmatic™ 22
		2 female					



Note :

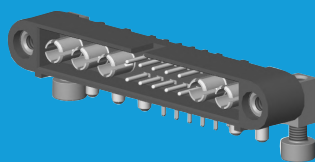
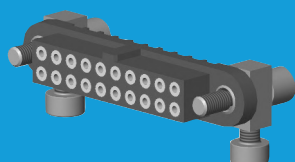
For any configuration outside of this part numbering system, please contact us.

numbering system



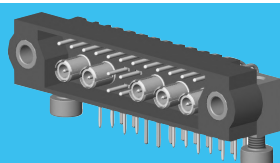
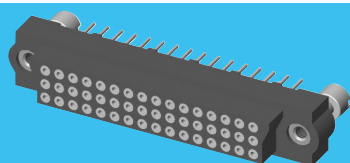
CMM 100/200 Series

p. 17 to 25



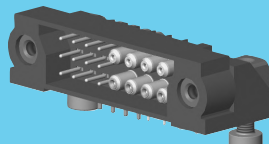
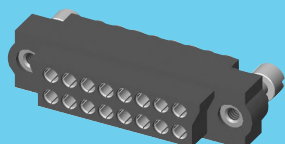
CMM 220 Series

p. 27 to 46



CMM 320 Series

p. 47 to 59



CMM 340 Series

p. 60 to 74

High Frequency and High Power contacts (HF) (HP)

p. 75 to 102

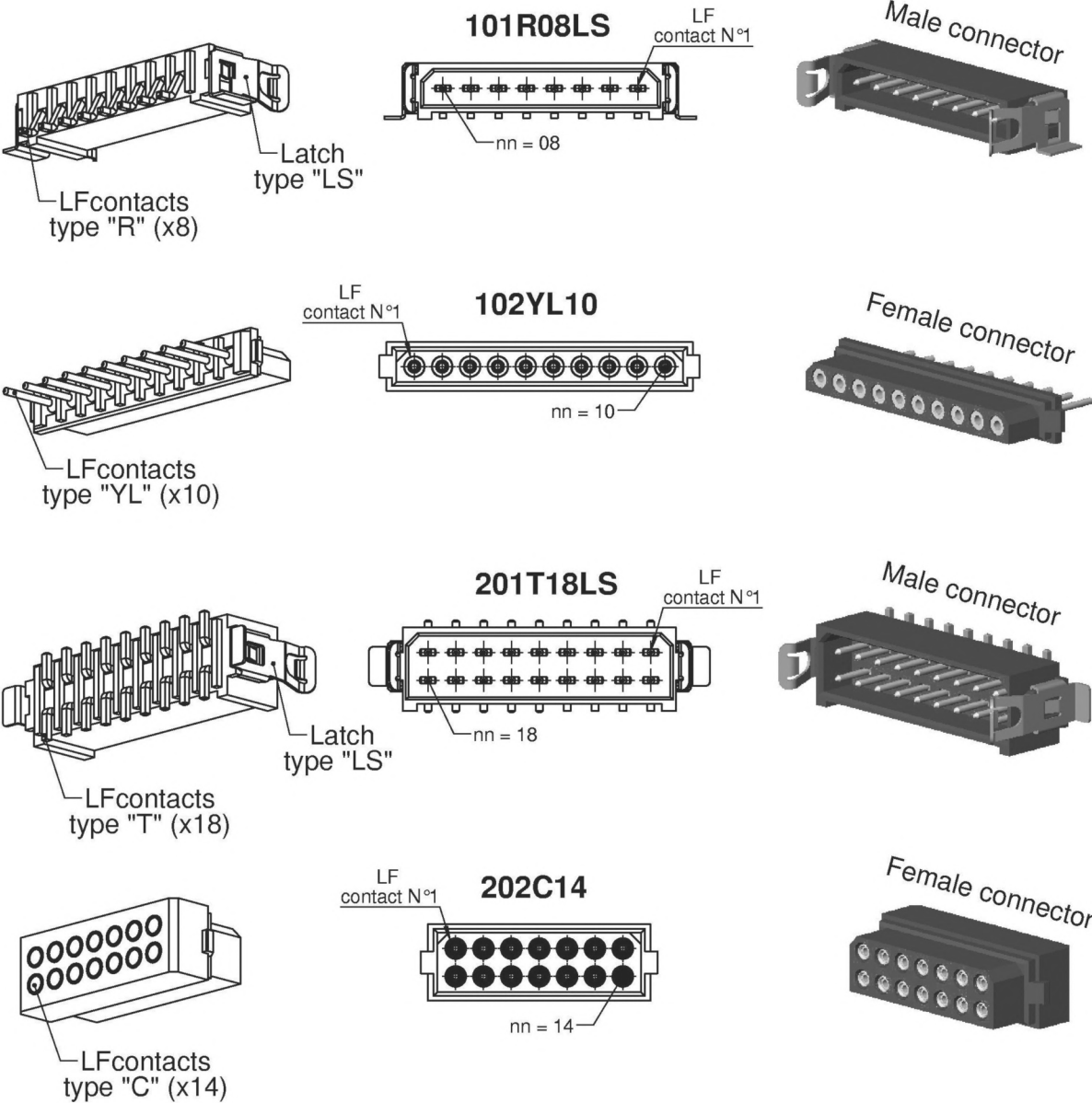
Tools and accessories

p. 103 to 112

Cable instructions & assembly

p. 113 to 122

CMM 100 / 200



PART NUMBERING REMINDER

Code with Low Frequency contacts only

Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware
--------	--------	-------------------	-----------------------	-----------------

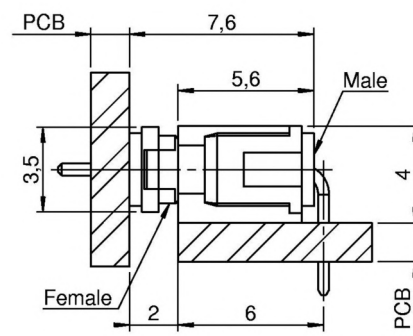
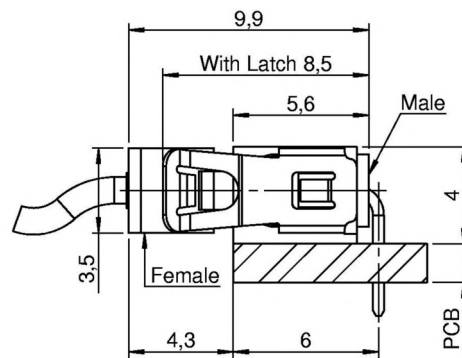
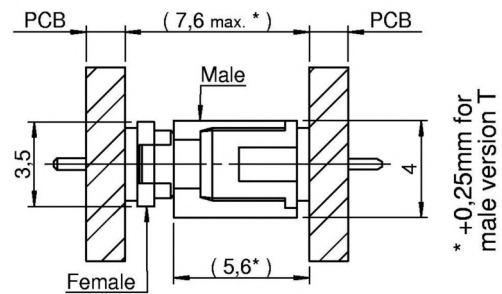
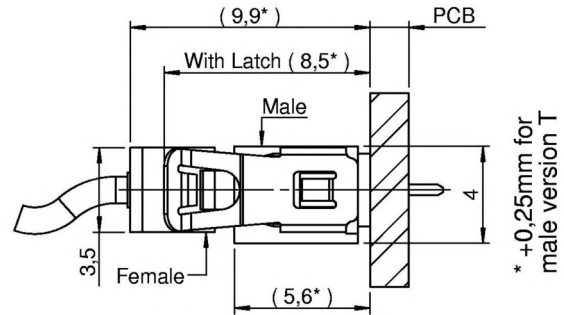
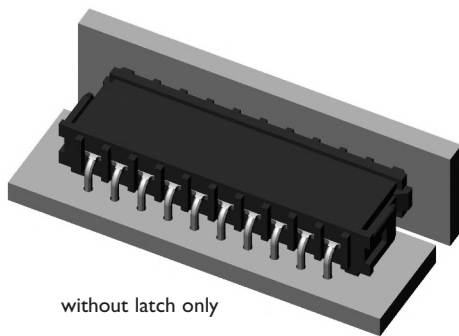
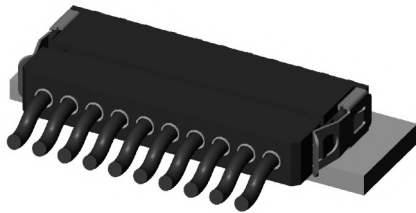
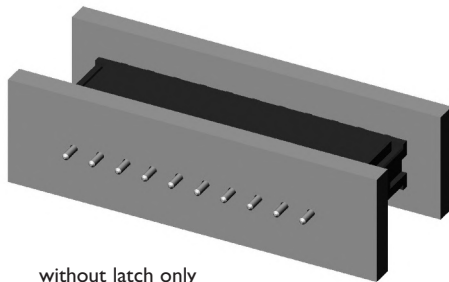
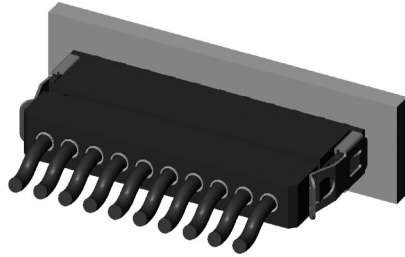


1 row	10	1 male	Refer to table on page 7	02 to 25	With Latch "L", "FL", "LS" page 22
		2 female			Without Latch " "
2 rows	20	1 male	Refer to table on page 7	04 to 50	With Latch "L", "FL", "LS" page 22
		2 female			Without Latch " "

Configuration

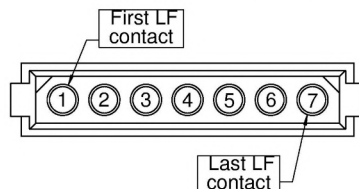
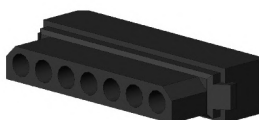
CMM 100

CONNECTOR SPACING



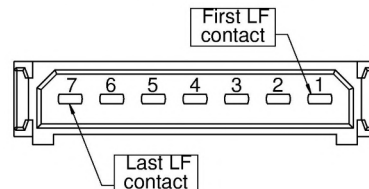
CONTACTS POSITIONS

Female connectors
(shown looking onto mating face)

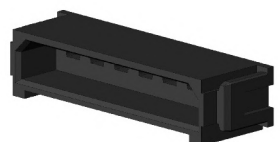


LF contacts min. 02 / max. 25

Male connectors
(shown looking onto mating face)

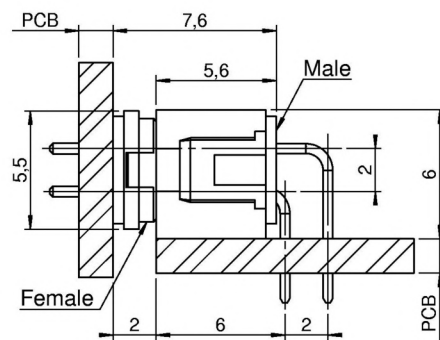
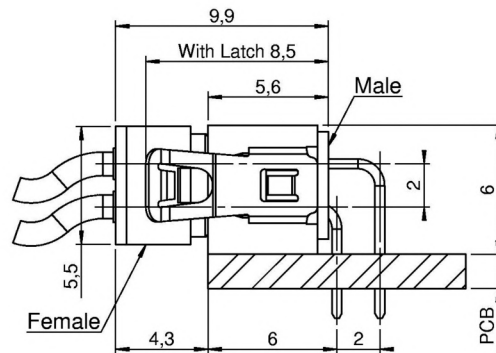
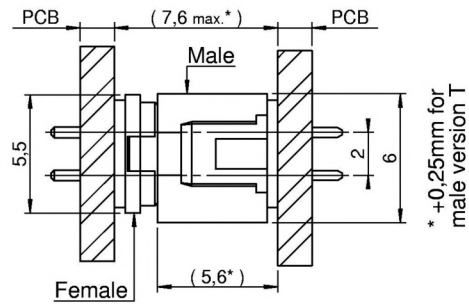
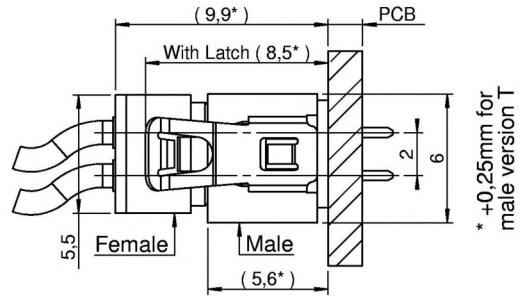
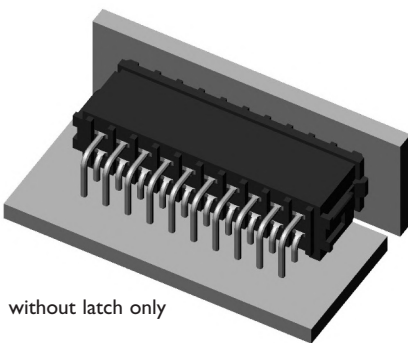
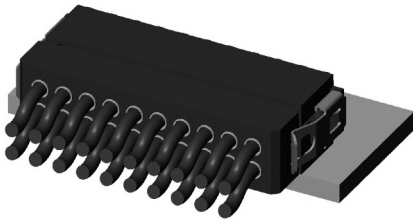
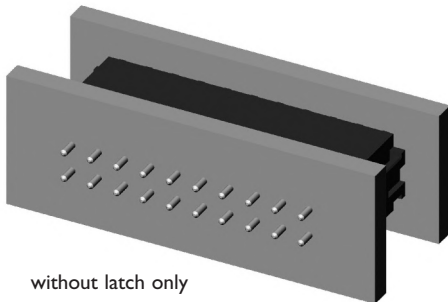
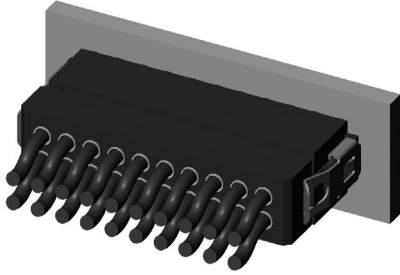


LF contacts min. 02 / max. 25

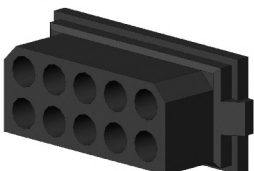


Configuration CMM 200

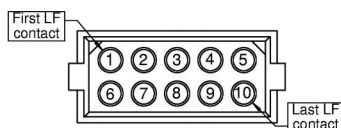
CONNECTOR SPACING



CONTACTS POSITIONS

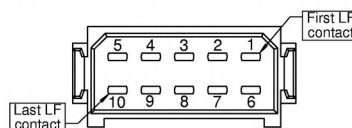


Female connectors
(shown looking onto mating face)

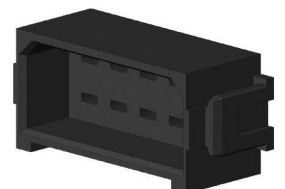


LF contacts min. 04 / max. 50

Male connectors
(shown looking onto mating face)



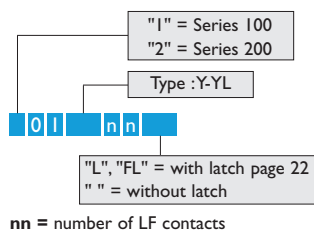
LF contacts min. 04 / max. 50



CMM 100 / 200 male

STRAIGHT PCB

Part numbering :

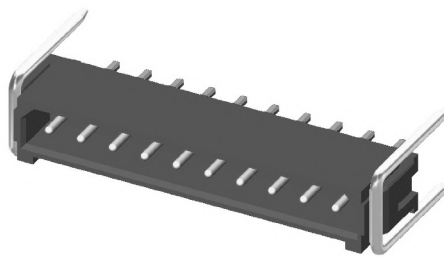
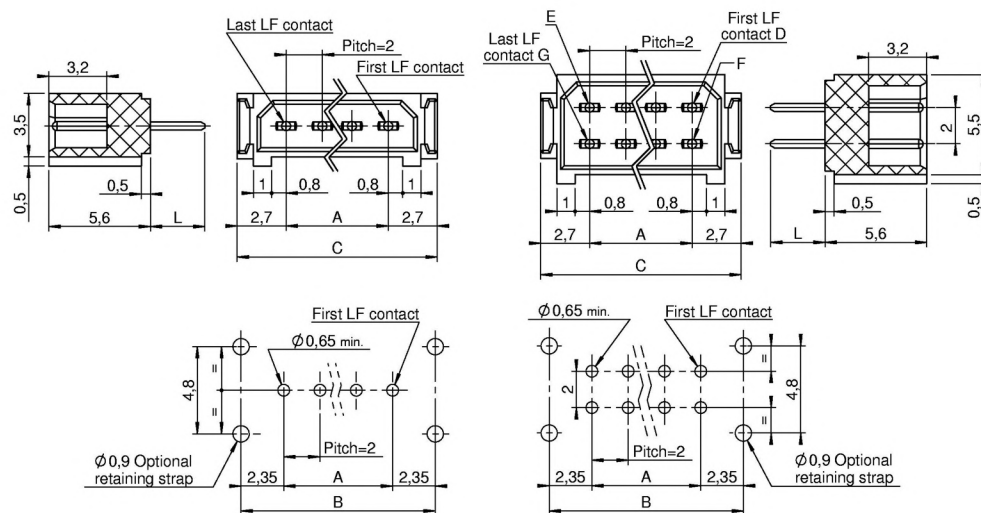


Type	L
Y	3
YL	4,5

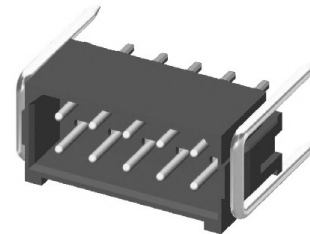
Calculation :

CMM 100	CMM 200
$A = (nn \times 2) - 2$	$A = nn - 2$
$B = A + 4,7$	$B = A + 4,7$
$C = A + 5,4$	$C = A + 5,4$

Refer to dimension table on cover page



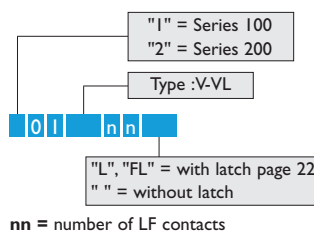
nn min = 02 nn max = 25



nn min = 04 nn max = 50

90° PCB

Part numbering :

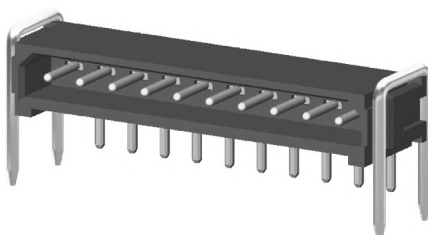
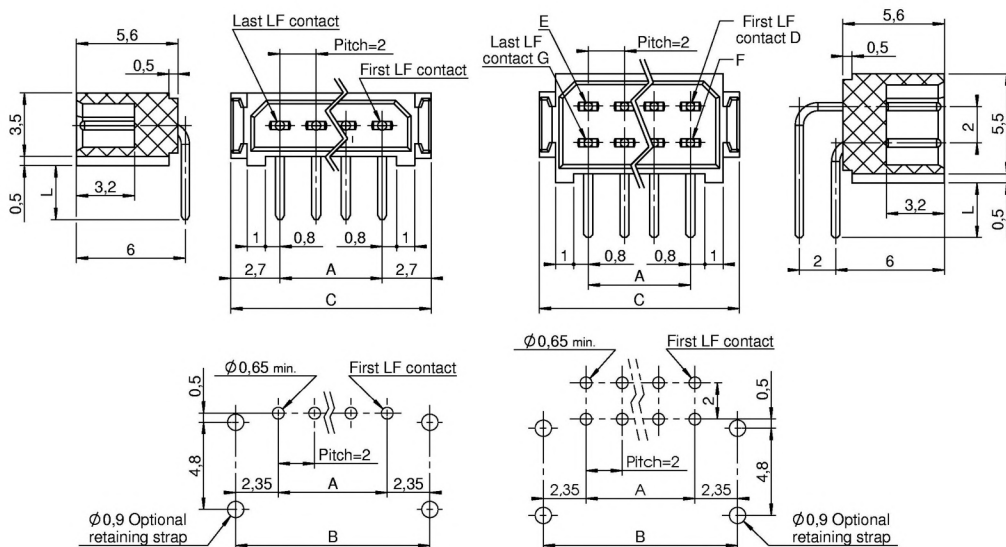


Type	L
V	3
VL	4,5

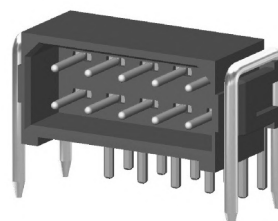
Calculation :

CMM 100	CMM 200
$A = (nn \times 2) - 2$	$A = nn - 2$
$B = A + 4,7$	$B = A + 4,7$
$C = A + 5,4$	$C = A + 5,4$

Refer to dimension table on cover page



nn min = 02 nn max = 25

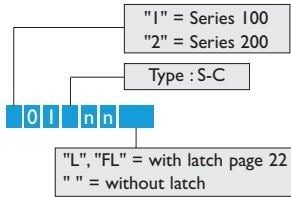


nn min = 04 nn max = 50

CMM 100 / 200 male

CRIMP

Part numbering :



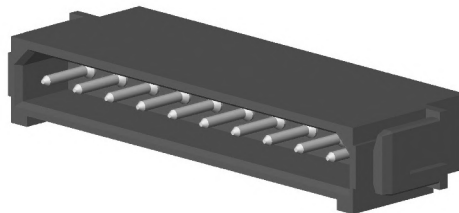
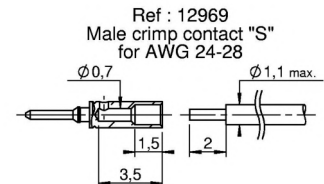
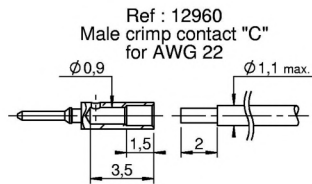
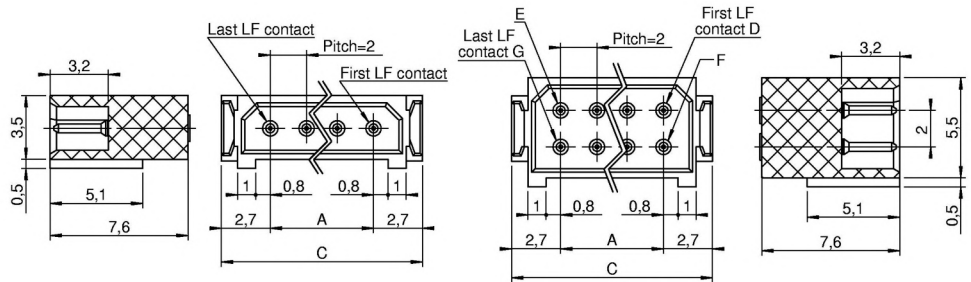
Type	Gauge
S	24-28
C	22

nn = number of LF contacts

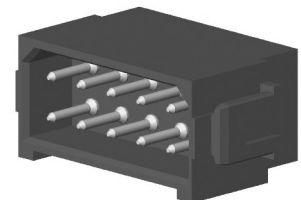
Calculation :

CMM 100	CMM 200
$A = (nn \times 2) - 2$	$A = nn - 2$
$C = A + 5,4$	$C = A + 5,4$

Refer to dimension table on cover page



nn min = 02 nn max = 25



nn min = 04 nn max = 50

RETENTION LATCHES FOR CMM 100 / 200 MALE

Straight latch with locking "L"

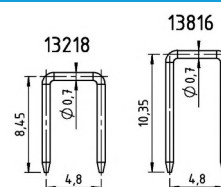
Straight latch without locking "FL"

Latch for CMM connector with T termination style "LS"

Latch for CMM connector with R termination style "LS"

The strain relief straps are supplied with all male CMM 100 / 200 connectors mounted with latches L or FL type except for Y & YL

PCB Thickness	P/N	Termination style			
< 2,5 mm	13218	V	Y	T/TL	R
> 2,5 mm	13816	VL	YL	T/TL	R

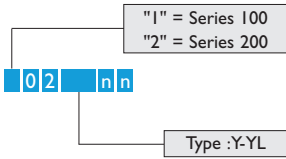


If no strain relief straps with your connector, please order under P/Ns on the left

CMM 100 / 200 female

STRAIGHT PCB

Part numbering :



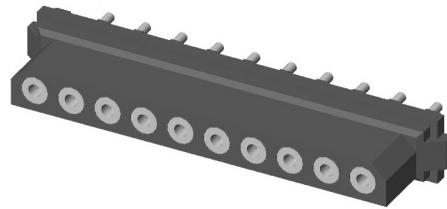
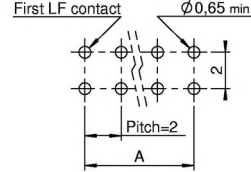
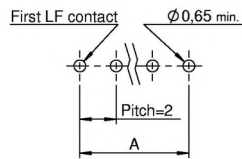
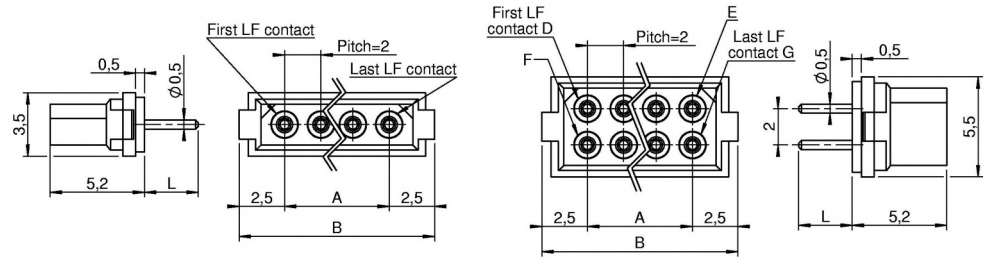
Type	L
Y	3
YL	4,5

nn = number of LF contacts

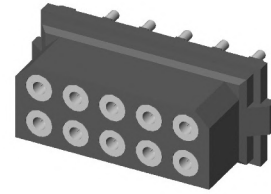
Calculation :

CMM 100	CMM 200
$A = (nn \times 2) - 2$	$A = nn - 2$
$B = A + 5$	$B = A + 5$

Refer to dimension table on cover page



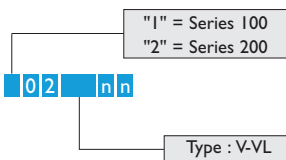
nn min = 02 nn max = 25



nn min = 04 nn max = 50

90° PCB

Part numbering :



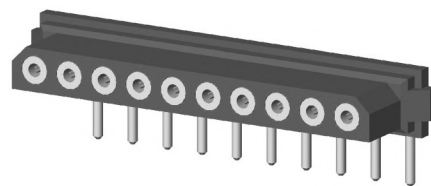
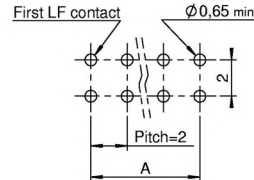
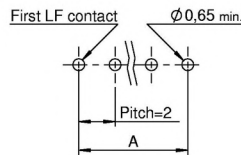
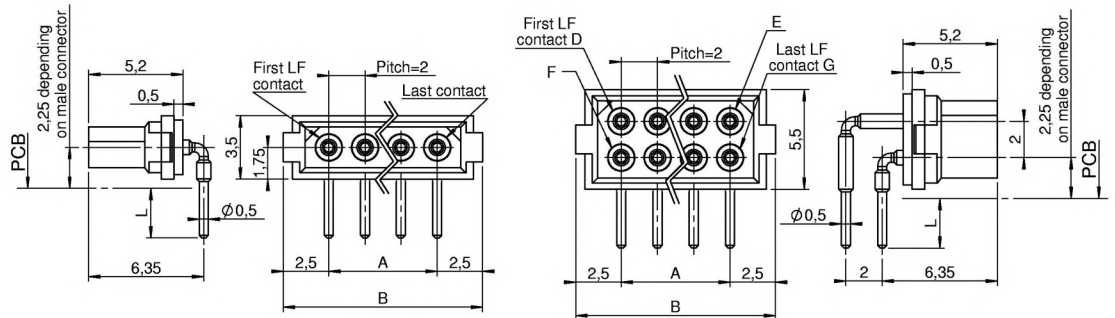
Type	L
V	3
VL	4,5

nn = number of LF contacts

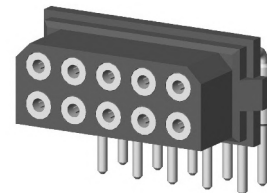
Calculation :

CMM 100	CMM 200
$A = (nn \times 2) - 2$	$A = nn - 2$
$B = A + 5$	$B = A + 5$

Refer to dimension table on cover page



nn min = 02 nn max = 25



nn min = 04 nn max = 50

CMM 100 / 200 female

STRAIGHT PRESS FIT

Part numbering :

"1" = Series 100
"2" = Series 200

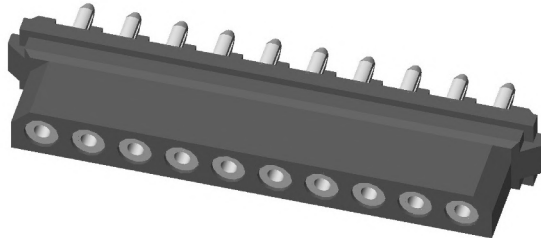
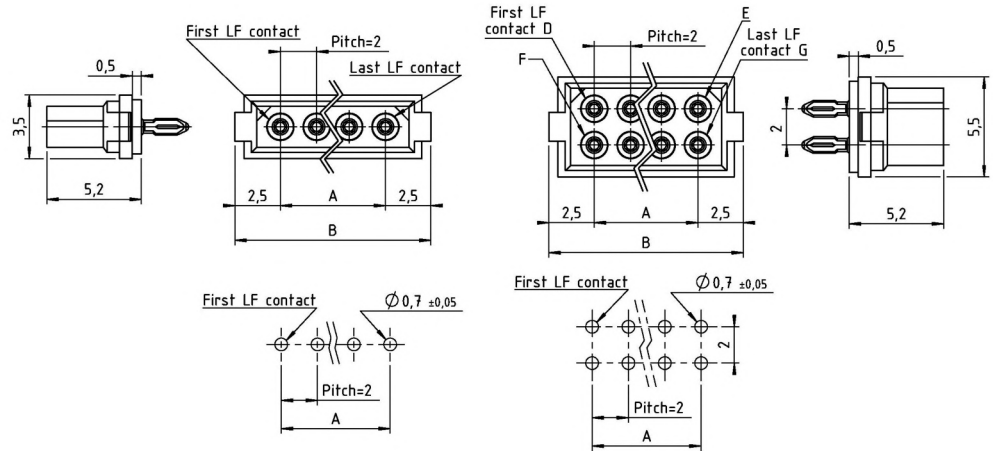
02 PF n n

nn = number of LF contacts

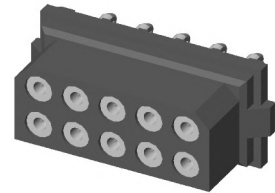
Calculation :

CMM 100	CMM 200
$A = (nn \times 2) - 2$	$A = nn - 2$
$B = A + 5$	$B = A + 5$

Refer to dimension table on cover page



nn min = 02 nn max = 25



nn min = 04 nn max = 50

90° SMT

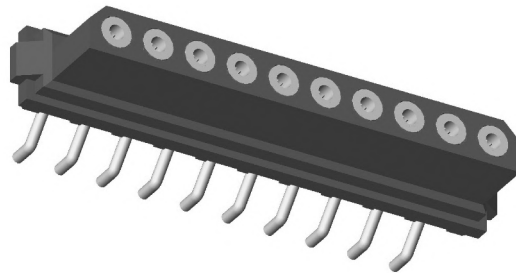
Part numbering :

"1" = Series 100
"2" = Series 200

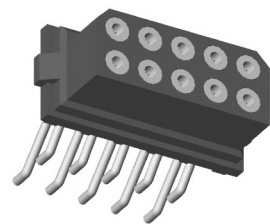
02 R n n

nn = number of LF contacts

Optional: Packaging in reel available upon request



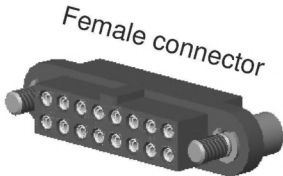
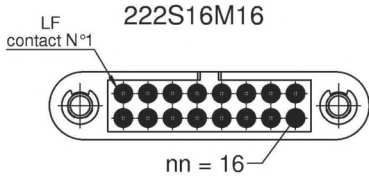
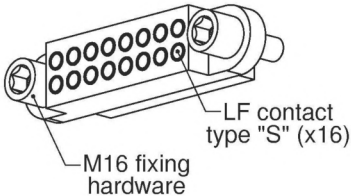
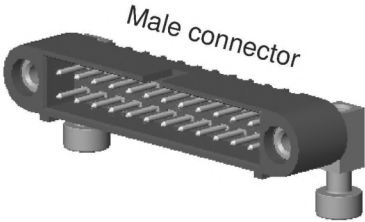
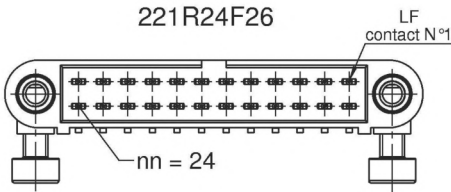
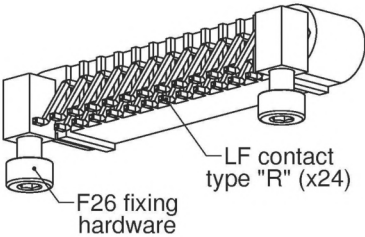
nn min = 02 nn max = 25



nn min = 04 nn max = 50

Upon request only

CMM 220 with LF contacts



PART NUMBERING REMINDER

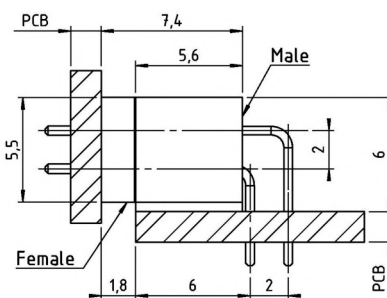
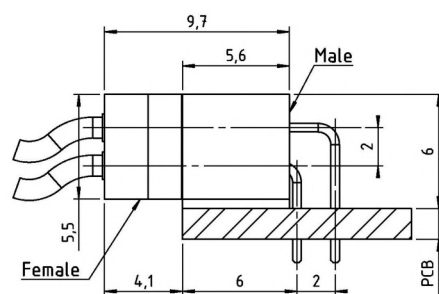
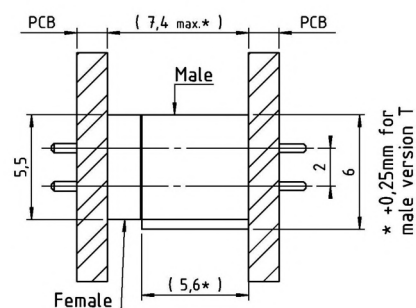
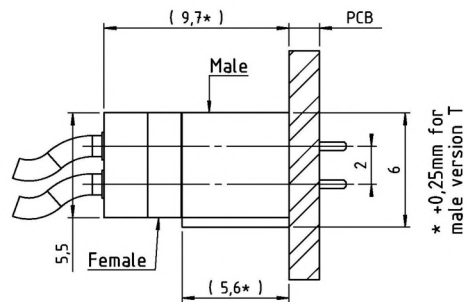
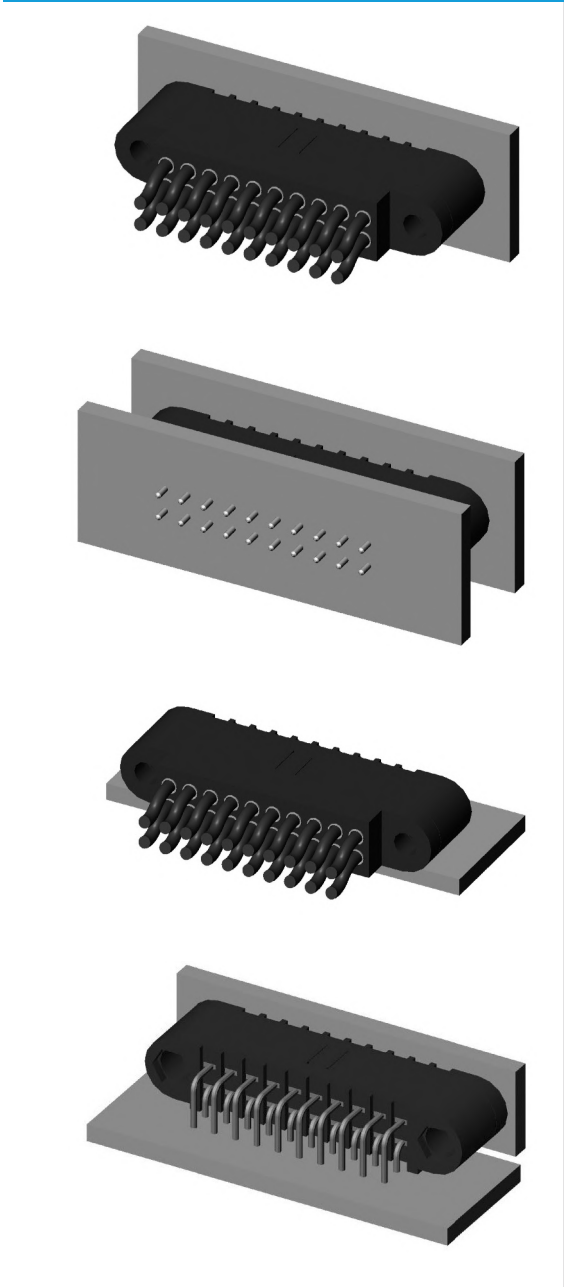
Code with Low Frequency contacts only				
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware



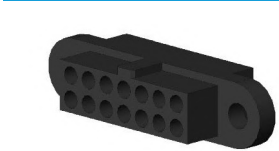
2 rows	22	1 male	Refer to table on page 7	04 to 60	Refer to pages 43 to 46
		2 female			

CMM 220 Configuration

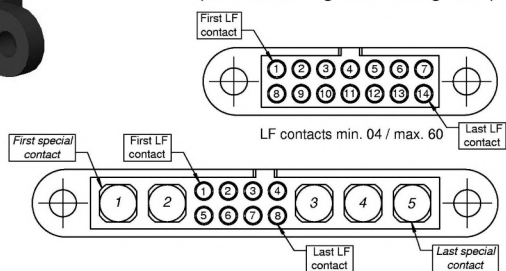
CONNECTOR SPACING



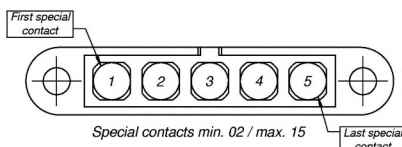
CONTACTS POSITIONS



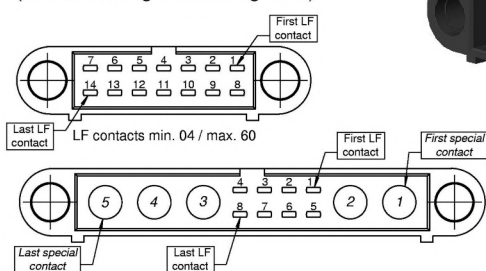
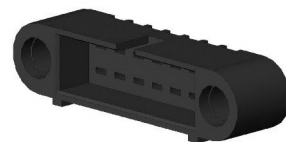
Female connectors
(shown looking onto mating face)



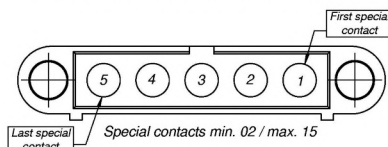
Mixed layout max. configuration depends on the total LF contacts number



Male connectors
(shown looking onto mating face)

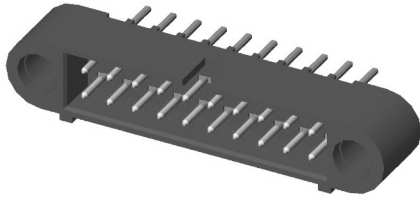


Mixed layout max. configuration depends on the total LF contacts number



CMM 220 male

STRAIGHT PCB



nn min = 04 nn max = 60

Part numbering :

Type : Y-YL

2 2 1 n n

See Fixing on page 43, 44
"Fxx" without fixing

nn = number of LF contacts

Type	L
Y	3
YL	4,5

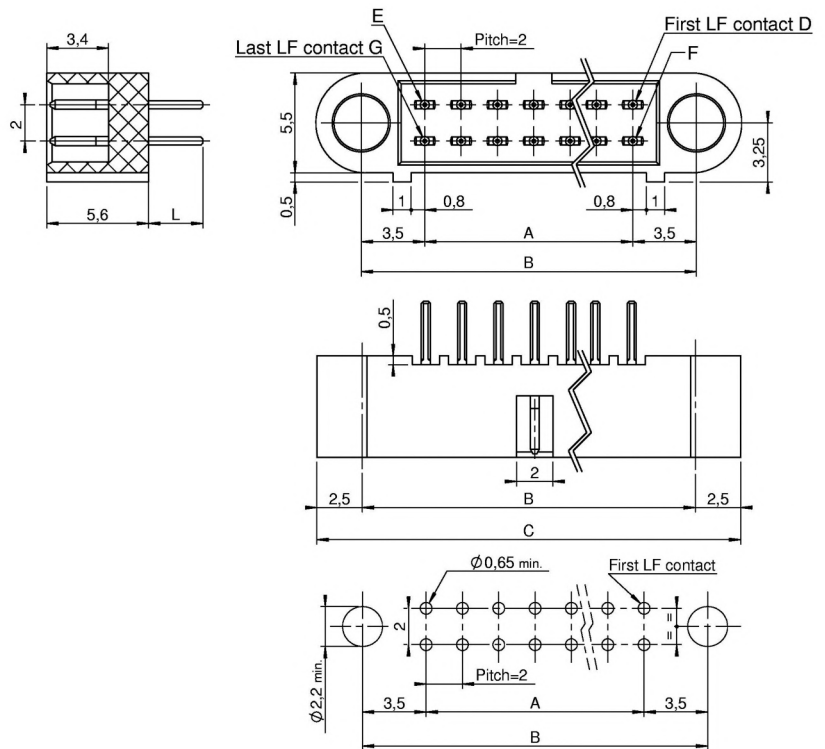
Calculation :

$$A = nn - 2$$

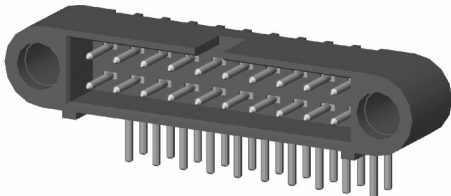
$$B = A + 7$$

$$C = A + 12$$

Refer to dimension table on cover page



90° PCB



nn min = 04 nn max = 60

Part numbering :

Type : V-VL

2 2 1 n n

See Fixing on page 43, 44
"Fxx" without fixing

nn = number of LF contacts

Type	L
V	3
VL	4,5

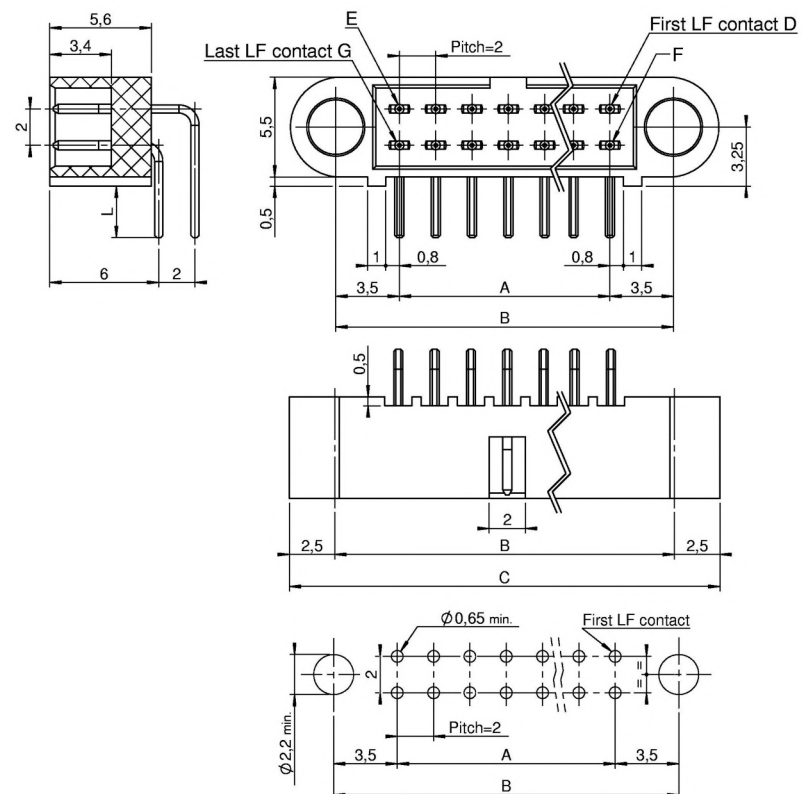
Calculation :

$$A = nn - 2$$

$$B = A + 7$$

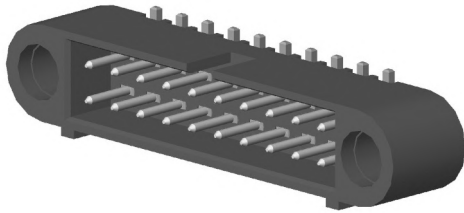
$$C = A + 12$$

Refer to dimension table on cover page



CMM 220 male

STRAIGHT SMT



nn min = 04 nn max = 60

Part numbering :

Type : T-TL

221nn

See Fixing on page 43, 44
"Fxx" without fixing

nn = number of LF contacts

Optional: Packaging in reel available upon request

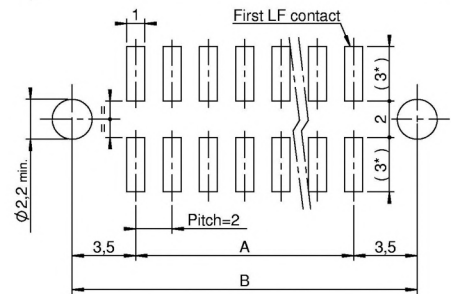
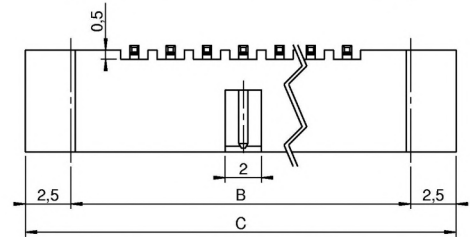
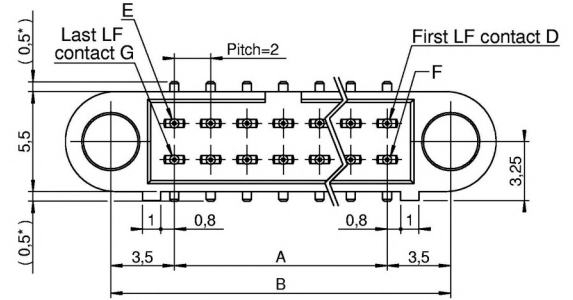
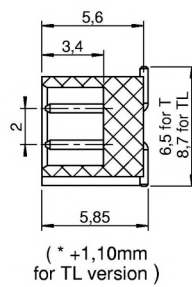
Calculation :

$$A = nn - 2$$

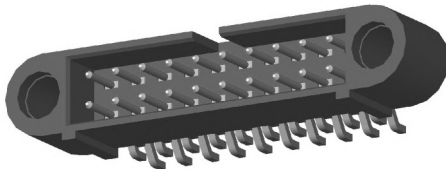
$$B = A + 7$$

$$C = A + 12$$

Refer to dimension table on cover page



90° SMT



nn min = 04 nn max = 60

Part numbering :

221Rnn

See Fixing on page 43, 44
"Fxx" without fixing

nn = number of LF contacts

Optional: Packaging in reel available upon request

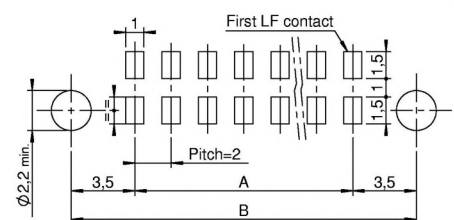
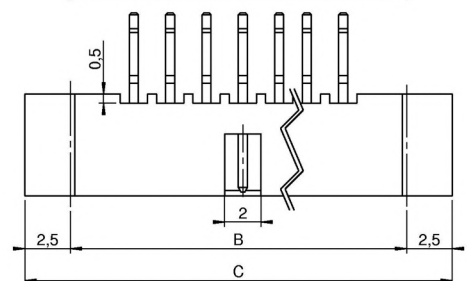
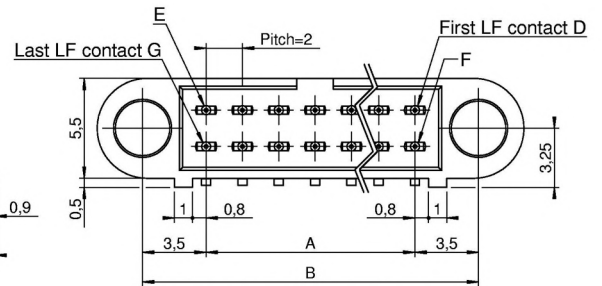
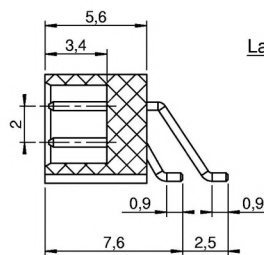
Calculation :

$$A = nn - 2$$

$$B = A + 7$$

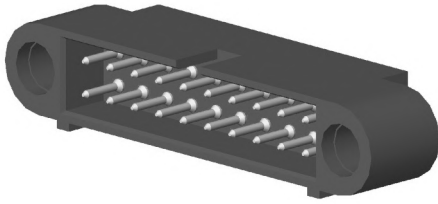
$$C = A + 12$$

Refer to dimension table on cover page



CMM 220 male

CRIMP



nn min = 04 nn max = 60

Part numbering :

Type : S-C

221nn

See Fixing on page 43, 44
"Fxx" without fixing

nn = number of LF contacts

Type	Gauge
S	24-28
C	22

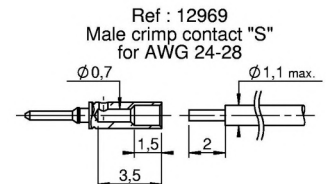
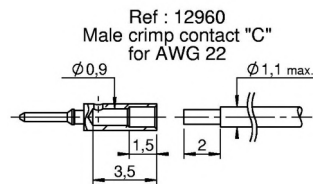
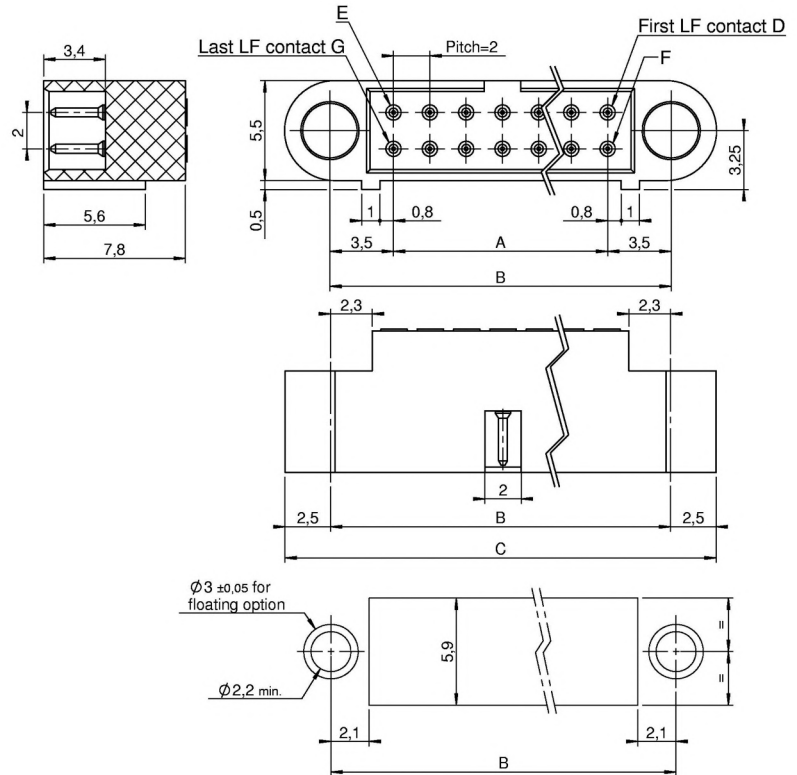
Calculation :

$$A = nn - 2$$

$$B = A + 7$$

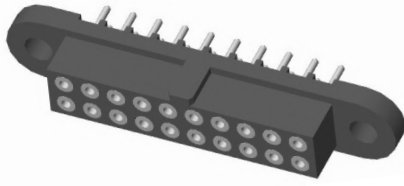
$$C = A + 12$$

Refer to dimension table on cover page



CMM 220 female

STRAIGHT PCB



nn min = 04 nn max = 60

Part numbering :

Type :Y-YL

2222 nn

See Fixing on page 45-46
"Mxx" without fixing

nn = number of LF contacts

Type	L
Y	3
YL	4,5

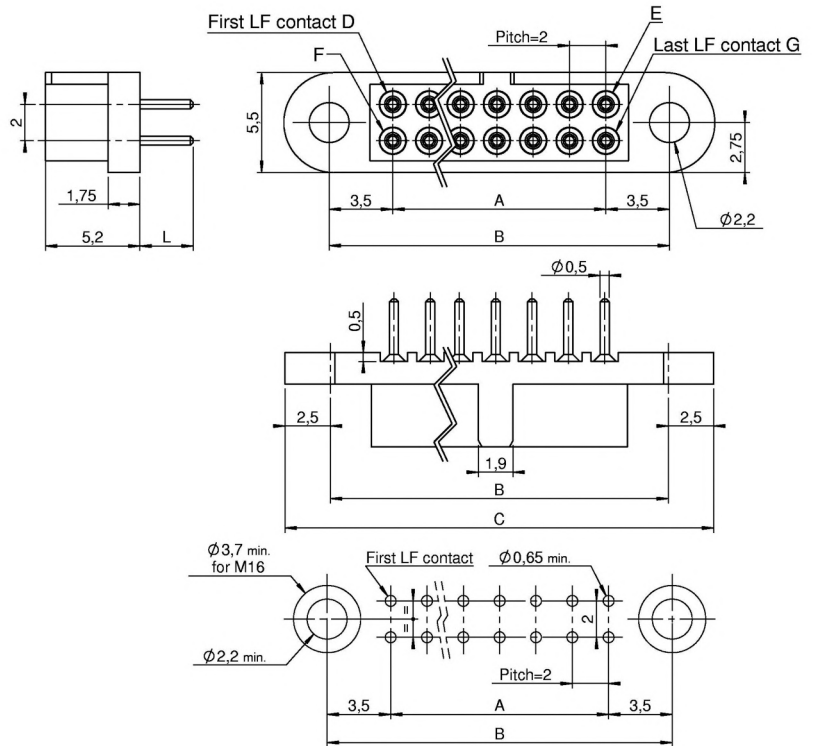
Calculation :

$$A = nn - 2$$

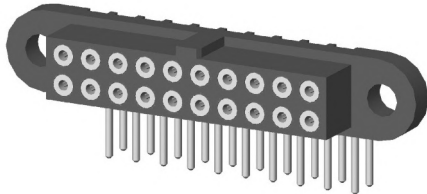
$$B = A + 7$$

$$C = A + 12$$

Refer to dimension table on cover page



90° PCB



nn min = 04 nn max = 60

Part numbering :

Type :V-VL

2222 nn

See Fixing on page 45
"Mxx" without fixing

nn = number of LF contacts

Type	L
V	3
VL	4,5

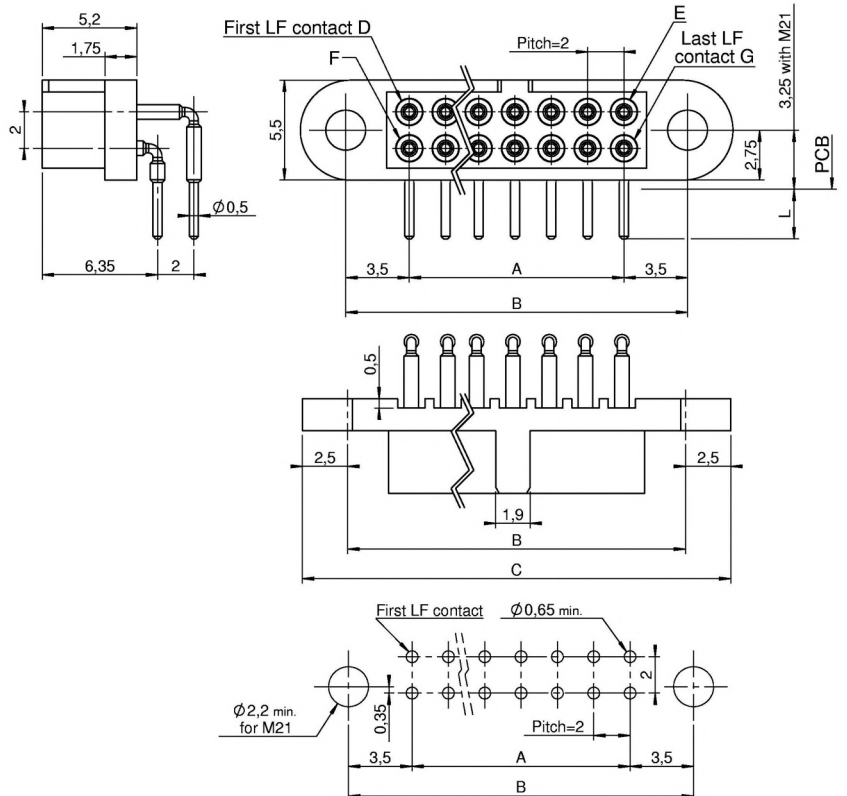
Calculation :

$$A = nn - 2$$

$$B = A + 7$$

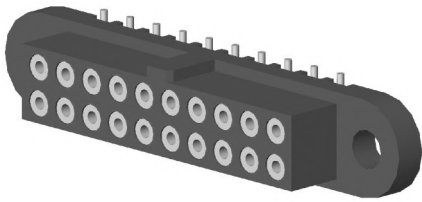
$$C = A + 12$$

Refer to dimension table on cover page



CMM 220 female

STRAIGHT SMT



nn min = 04 nn max = 60

Part numbering :

Type : T-TL

222 n n

See Fixing on page 45-46
"Mxx" without fixing

nn = number of LF contacts

Optional: Packaging in reel available upon request

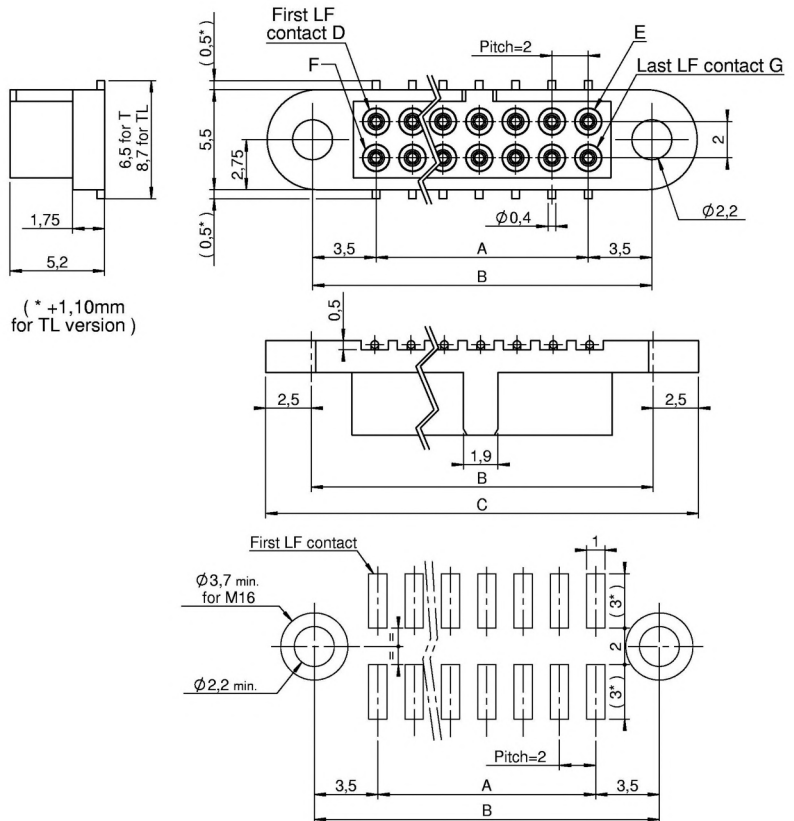
Calculation :

$$A = nn - 2$$

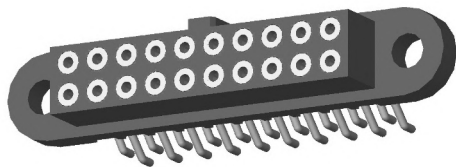
$$B = A + 7$$

$$C = A + 12$$

Refer to dimension table on cover page



90° SMT



nn min = 04 nn max = 60

Part numbering :

222R n n

See Fixing on page 45
"Mxx" without fixing

nn = number of LF contacts

Optional: Packaging in reel available upon request

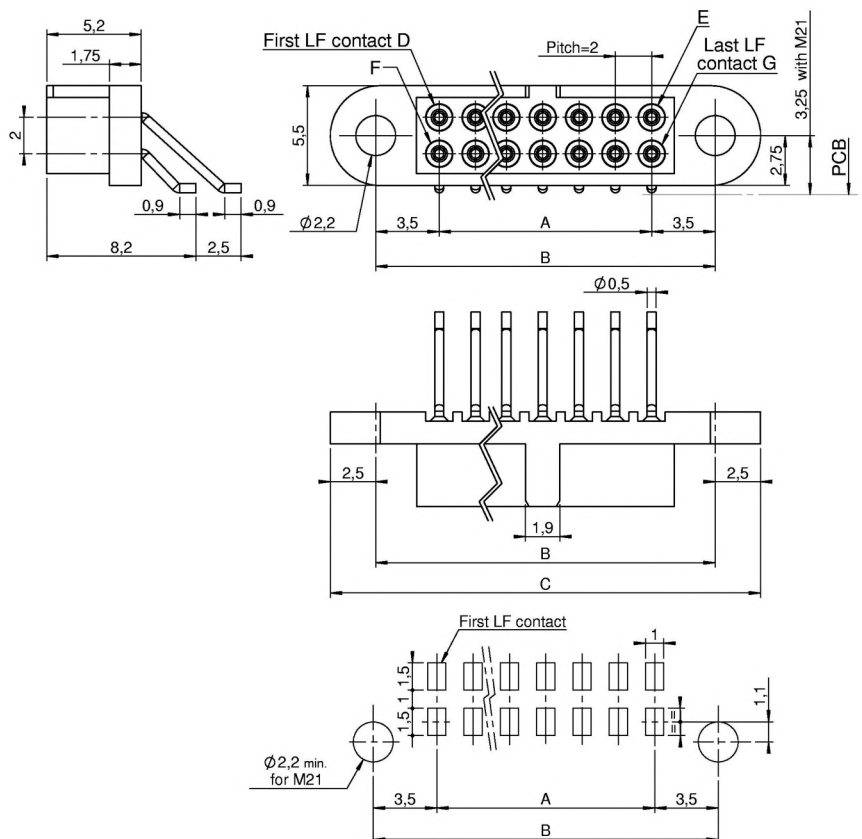
Calculation :

$$A = nn - 2$$

$$B = A + 7$$

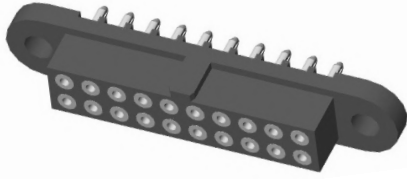
$$C = A + 12$$

Refer to dimension table on cover page



CMM 220 female

STRAIGHT PRESS FIT



nn min = 04 nn max = 60

Part numbering :

2 2 2 PF nn

See Fixing on page 45- 46
"Mxx" without fixing

nn = number of LF contacts

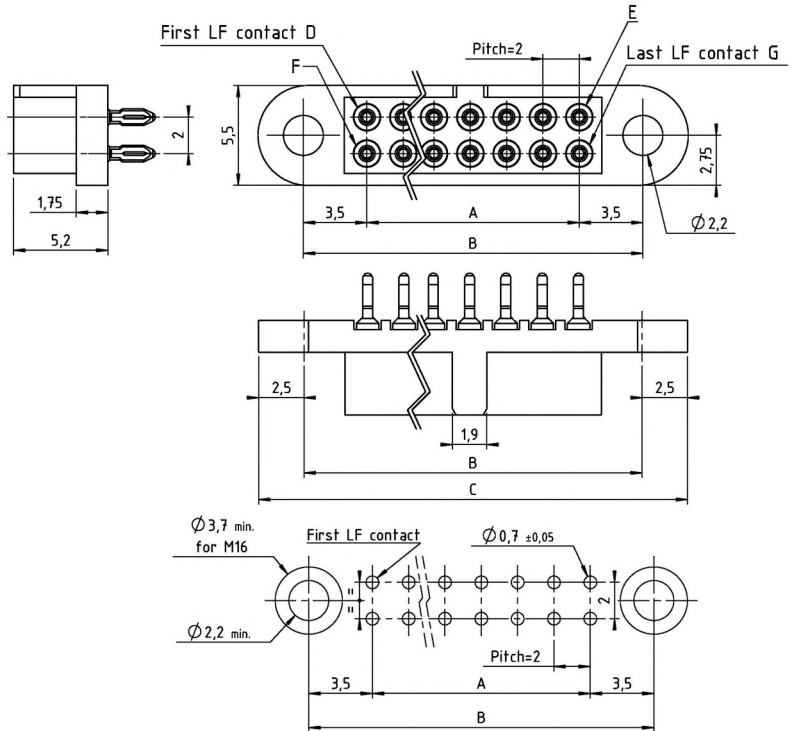
Calculation :

$$A = nn - 2$$

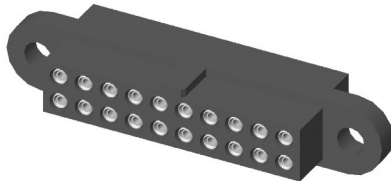
$$B = A + 7$$

$$C = A + 12$$

Refer to dimension table on cover page



CRIMP



nn min = 04 nn max = 60

Part numbering :

Type : S-C

2 2 2 nn

See Fixing on page 45-46
"Mxx" without fixing

nn = number of LF contacts

Type	Gauge
S	24-28
C	22

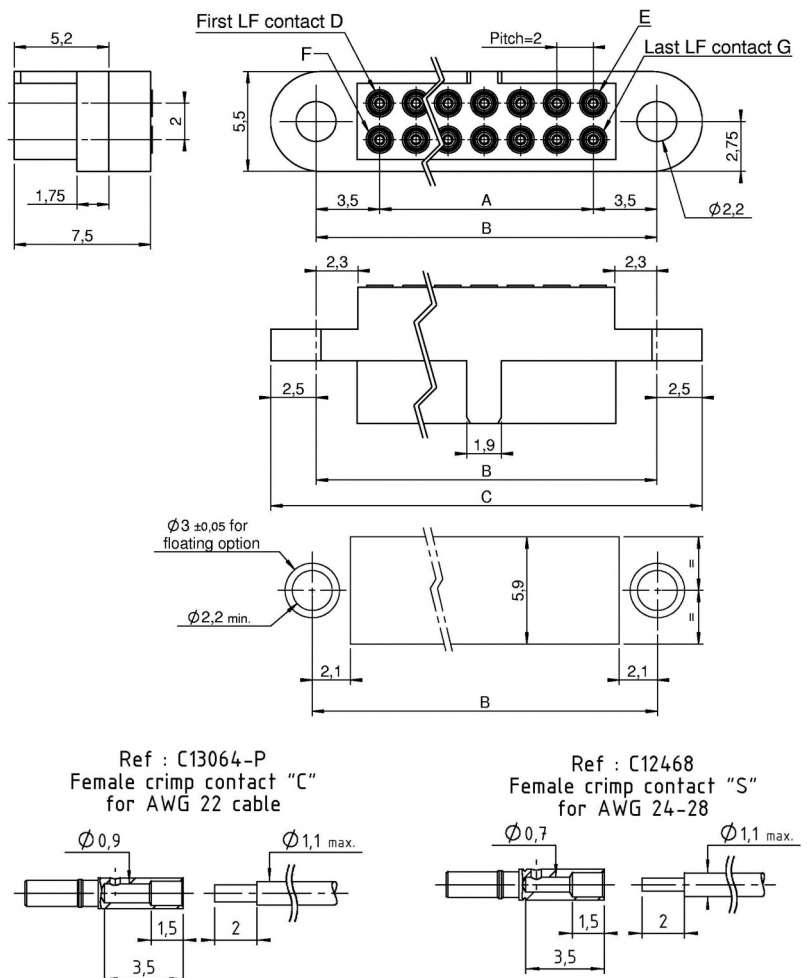
Calculation :

$$A = nn - 2$$

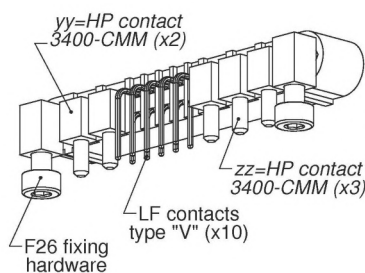
$$B = A + 7$$

$$C = A + 12$$

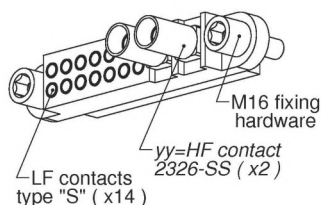
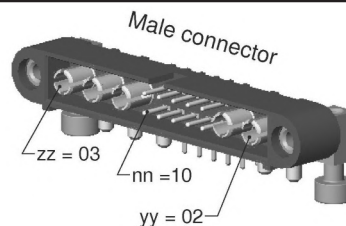
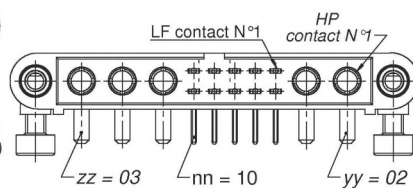
Refer to dimension table on cover page



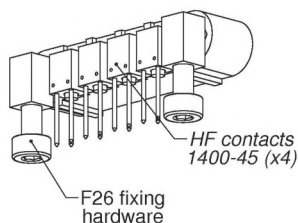
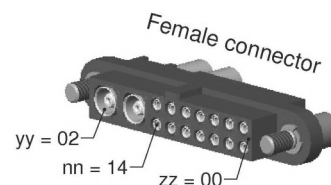
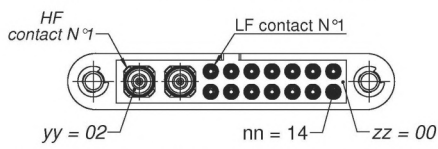
CMM 220 mixed-layout



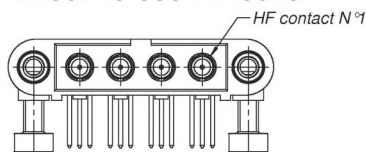
221V10F26-0203-3400CMM



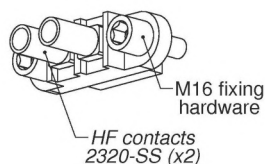
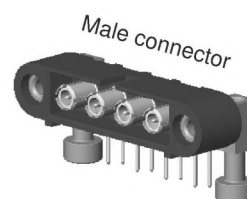
222S14M16-0200-2326SS



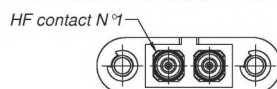
221D00F26-0004-140045



"D" stated in P/N for connectors on PCB with only special contacts.

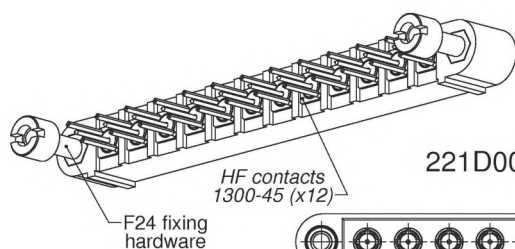
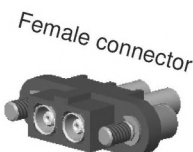


222E00M16-0002-2320SS

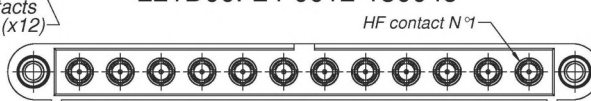


(HF contacts are supplied -not fitted- under P/N 30-2320-SS)

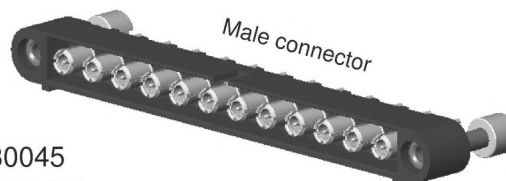
"E" stated in P/N for connectors on cable with only special contacts.



221D00F24-0012-130045



"D" stated in P/N for connectors on PCB with only special contacts.



PART NUMBERING REMINDER

Code with Low Frequency contacts only					Additional code for mixed-layout connector (HF/HP)		
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware	Number of HF/HP contacts pin 1 side (LF contact number 1)	Number of HF/HP contacts opposite to LF contact number 1	HF/HP Contact Type

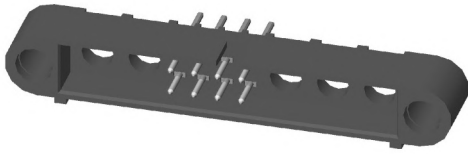
22
1
male
Refer to table on page 7
04 to 60
Refer to pages 43 to 46
Depends upon the number of LF contacts
If use with shifted central key, please refer to page 42
HF / HP : 15 contacts max.
Type of HF/HP contact : please refer to pages 8-9
HP/HP 30
please refer to pages 75 to 94

2 rows	22	1 male	Refer to table on page 7	04 to 60	Refer to pages 43 to 46	Depends upon the number of LF contacts If use with shifted central key, please refer to page 42 HF / HP : 15 contacts max. Type of HF/HP contact : please refer to pages 8-9	HP/HP 30 please refer to pages 75 to 94
		2 female					

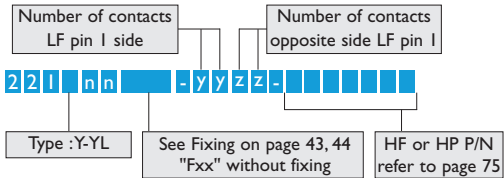
CMM 220

Male mixed-layout

STRAIGHT PCB



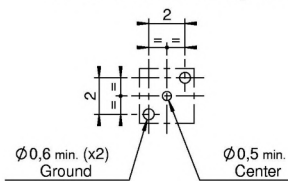
Part numbering :



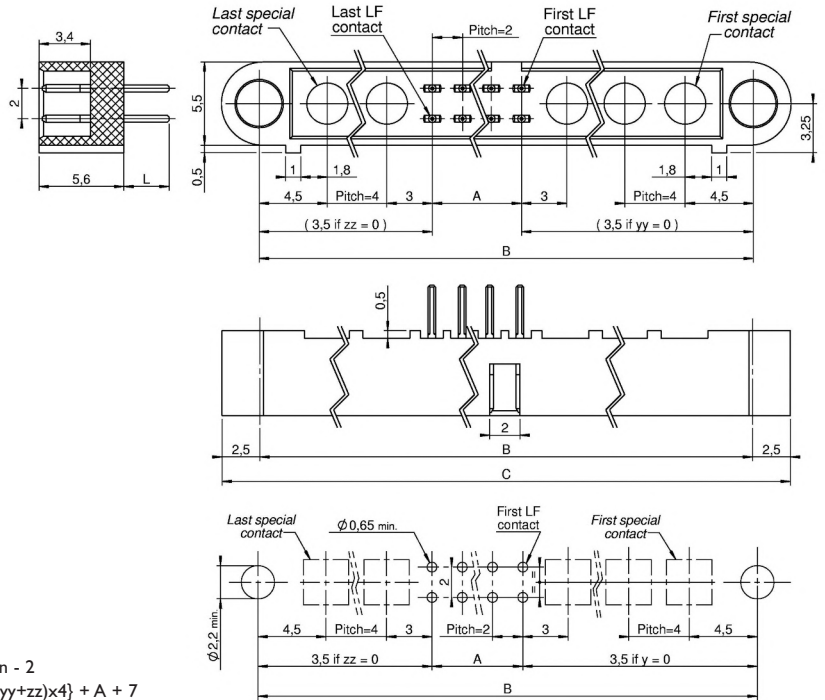
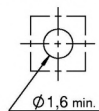
Type	L
Y	3
YL	4,5

Pattern for special contact :

HF 30-1300-xx PCB lay-out



HP 30-3300-xx PCB lay-out



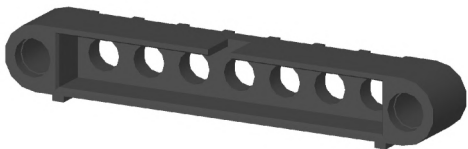
$$A = nn - 2$$

$$B = \{(yy+zz) \times 4\} + A + 7$$

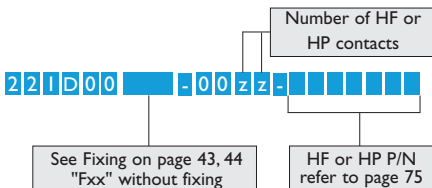
$$B_{max} = 65 \text{ mm}$$

$$C = B + 5$$

STRAIGHT PCB FOR HP/HF CONTACTS ONLY

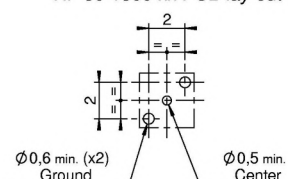


Part numbering :

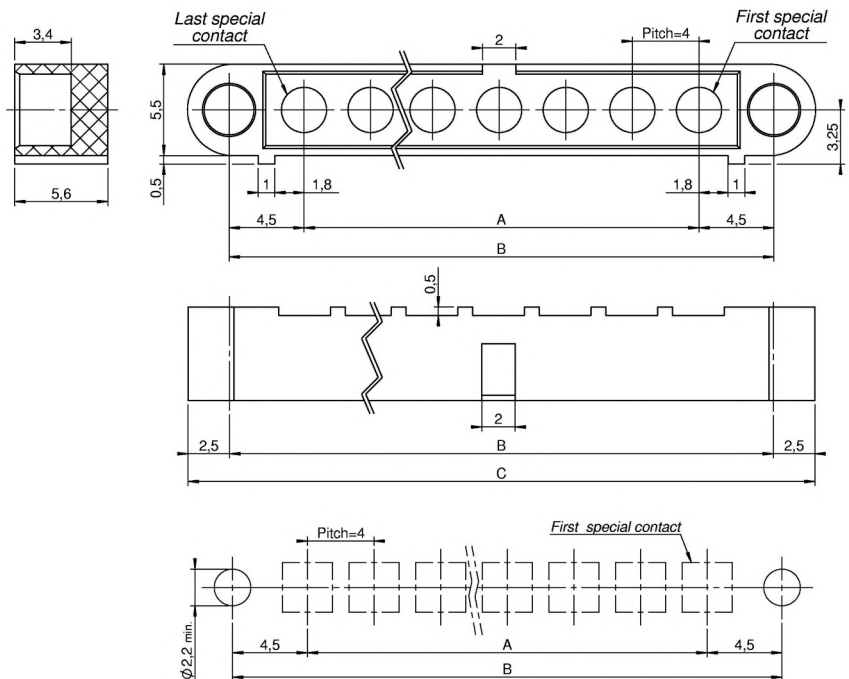
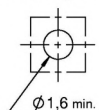


Pattern for special contact :

HF 30-1300-xx PCB lay-out



HP 30-3300-xx PCB lay-out



$$A = (zz \times 4) - 4$$

$$B = A + 9$$

$$C = B + 5$$

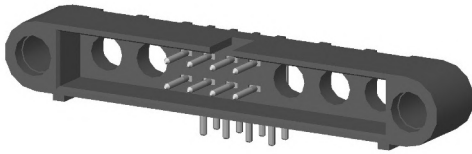
Special contacts min. : 02
max. : 15

Refer to dimension table on cover page

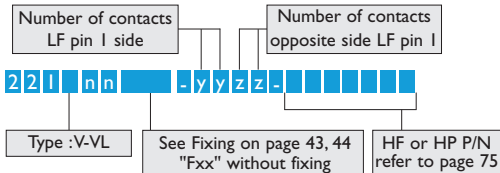
CMM 220

Male mixed-layout

90° PCB



Part numbering :

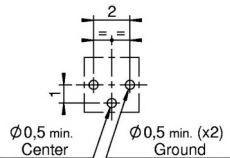


nn = number of LF contacts

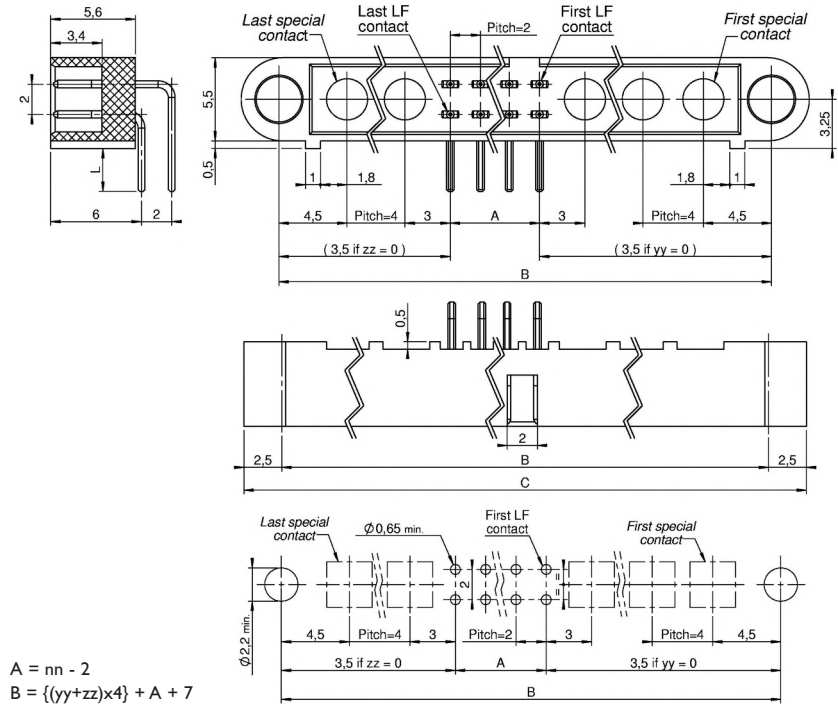
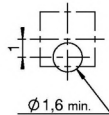
Type	L
V	3
VL	4,5

Pattern for special contact :

HF 30-1400-xx PCB lay-out



HP 30-3400-xx PCB lay-out



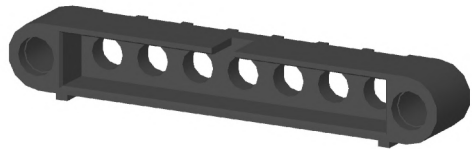
$$A = nn - 2$$

$$B = \{(yy+zz) \times 4\} + A + 7$$

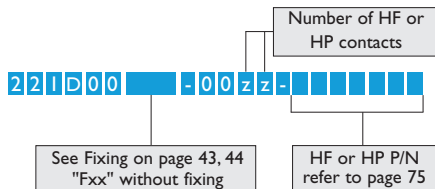
$$B_{max.} = 65 \text{ mm}$$

$$C = B + 5$$

90° PCB FOR HP/HF CONTACTS ONLY

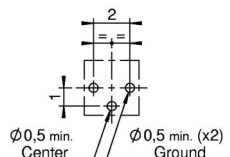


Part numbering :

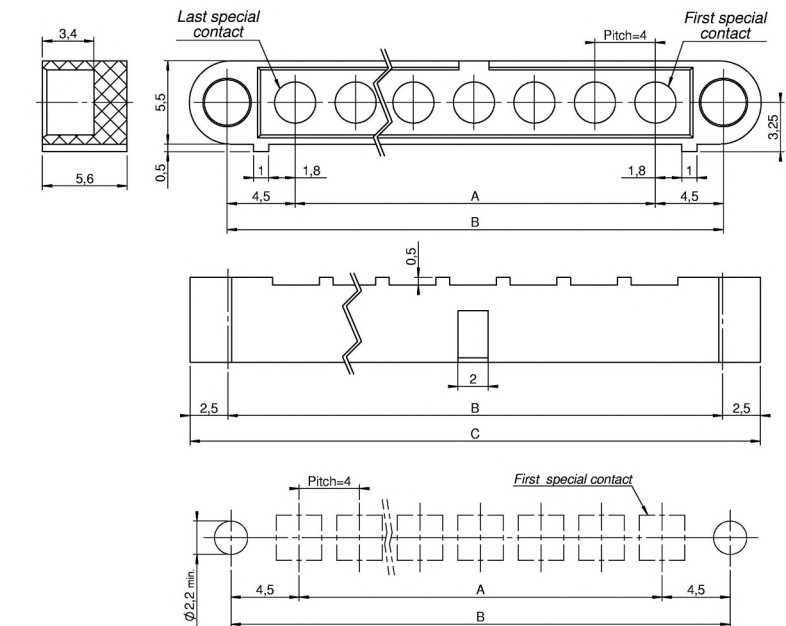
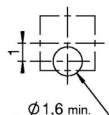


Pattern for special contact :

HF 30-1400-xx PCB lay-out



HP 30-3400-xx PCB lay-out



$$A = (zz \times 4) - 4$$

$$B = A + 9$$

$$C = B + 5$$

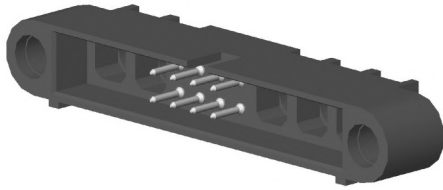
Special contacts min.: 02
max.: 15

Refer to sizes information table on cover page

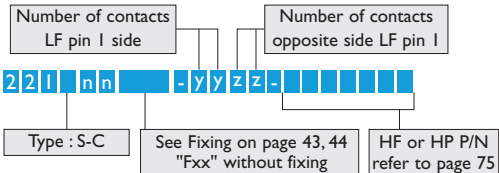
CMM 220

Male mixed-layout

CRIMP

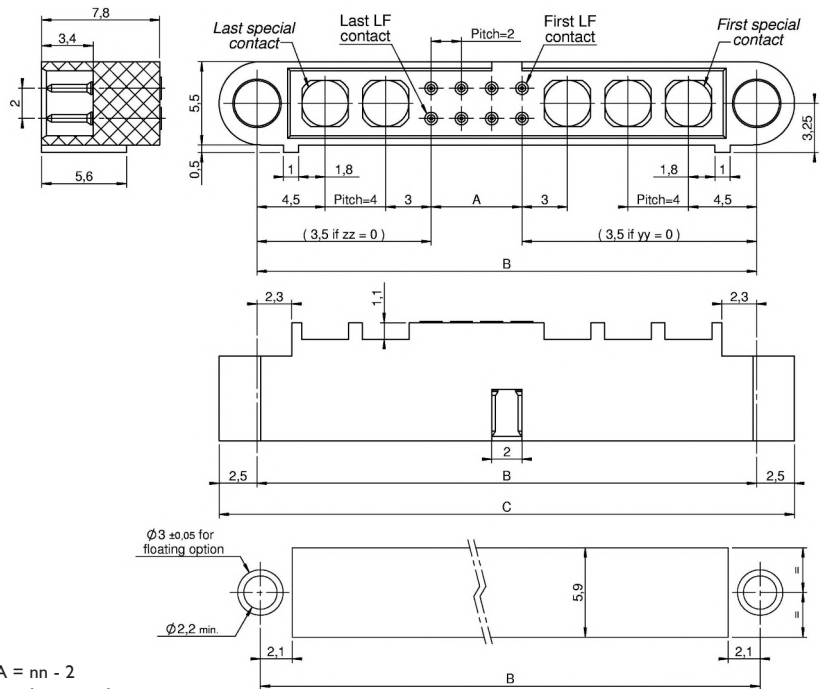
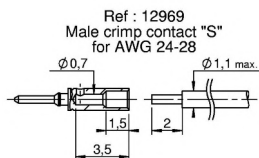
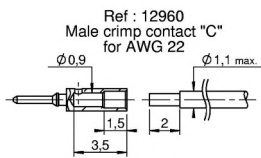


Part numbering :



nn = number of LF contacts

Type	Gauge
S	24-28
C	22



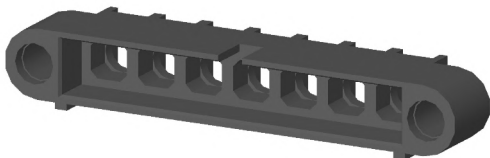
$$A = nn - 2$$

$$B = \{(yy+zz) \times 4\} + A + 7$$

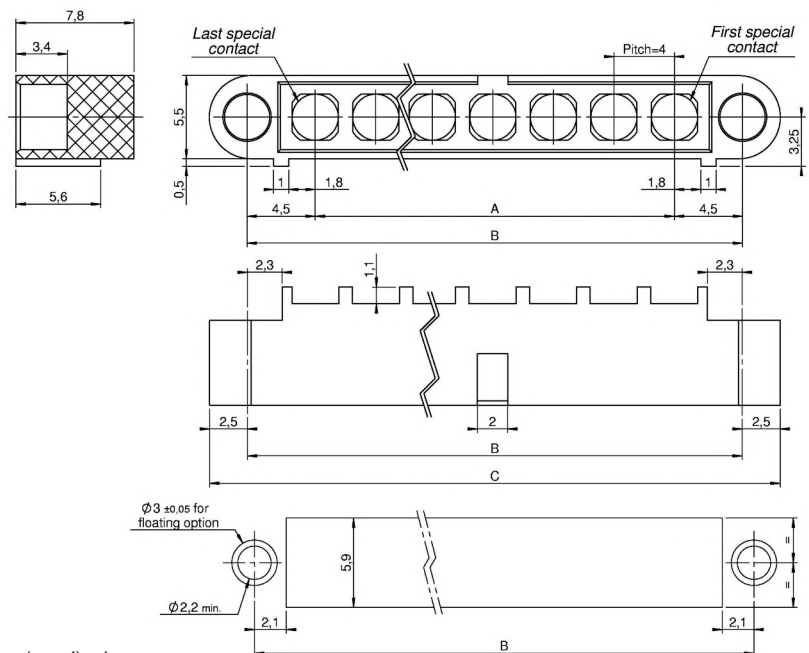
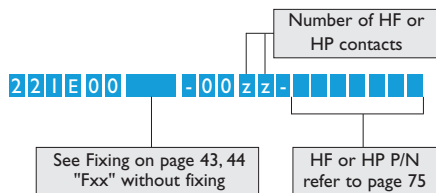
$$B_{max} = 65 \text{ mm}$$

$$C = B + 5$$

CRIMP FOR HP/HF CONTACTS ONLY



Part numbering :



$$A = (zz \times 4) - 4$$

$$B = A + 9$$

$$C = B + 5$$

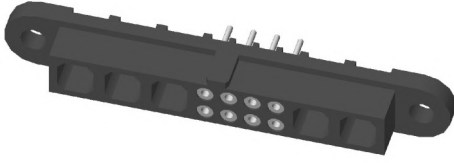
Special contacts min. : 02
max. : 15

Refer to dimension table
on cover page

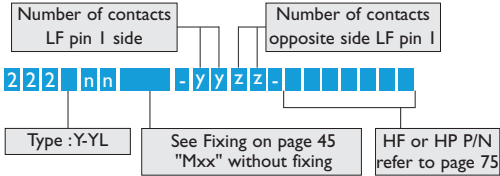
CMM 220

Female mixed-layout

STRAIGHT PCB



Part numbering :

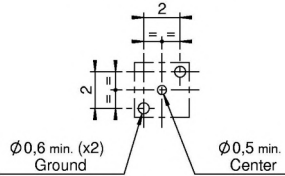


nn = number of LF contacts

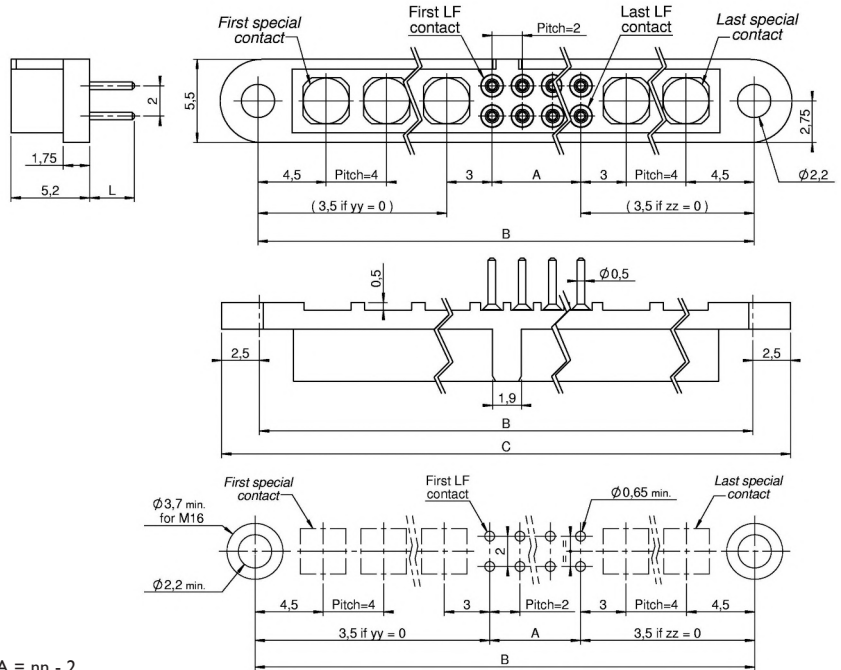
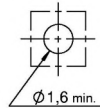
Type	L
Y	3
YL	4,5

Pattern for special contact :

HF 30-2300-xx PCB lay-out



HP 30-4300-xx PCB lay-out



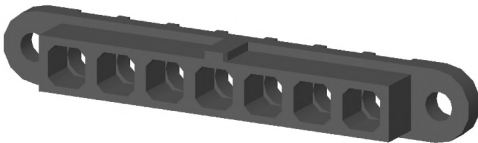
$$A = nn - 2$$

$$B = \{(yy+zz) \times 4\} + A + 7$$

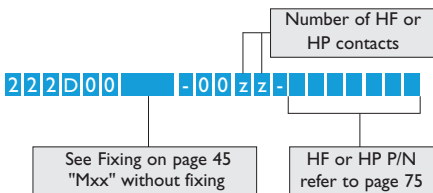
$$B_{max} = 65 \text{ mm}$$

$$C = B + 5$$

STRAIGHT PCB FOR HP/HF CONTACTS ONLY

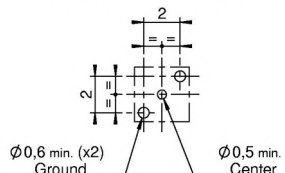


Part numbering :

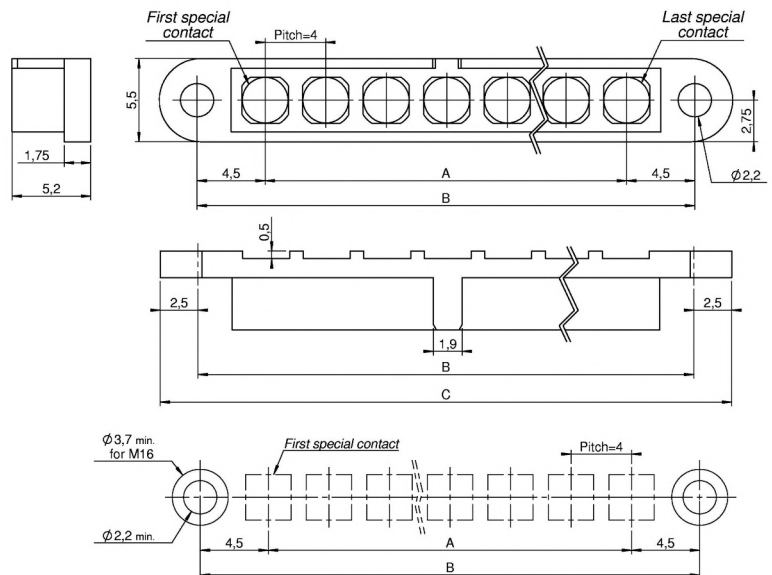
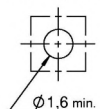


Pattern for special contact :

HF 30-2300-xx PCB lay-out



HP 30-4300-xx PCB lay-out



Special contacts min. : 02
max. : 15

$$A = (zz \times 4) - 4$$

$$B = A + 9$$

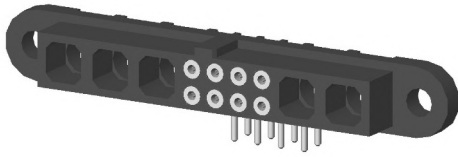
$$C = B + 5$$

Refer to dimension table on cover page

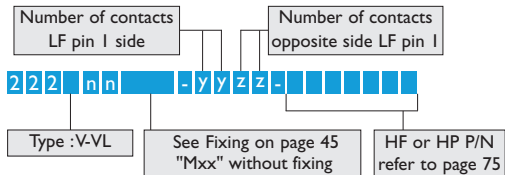
CMM 220

Female mixed-layout

90° PCB



Part numbering :

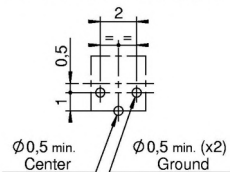


nn = number of LF contacts

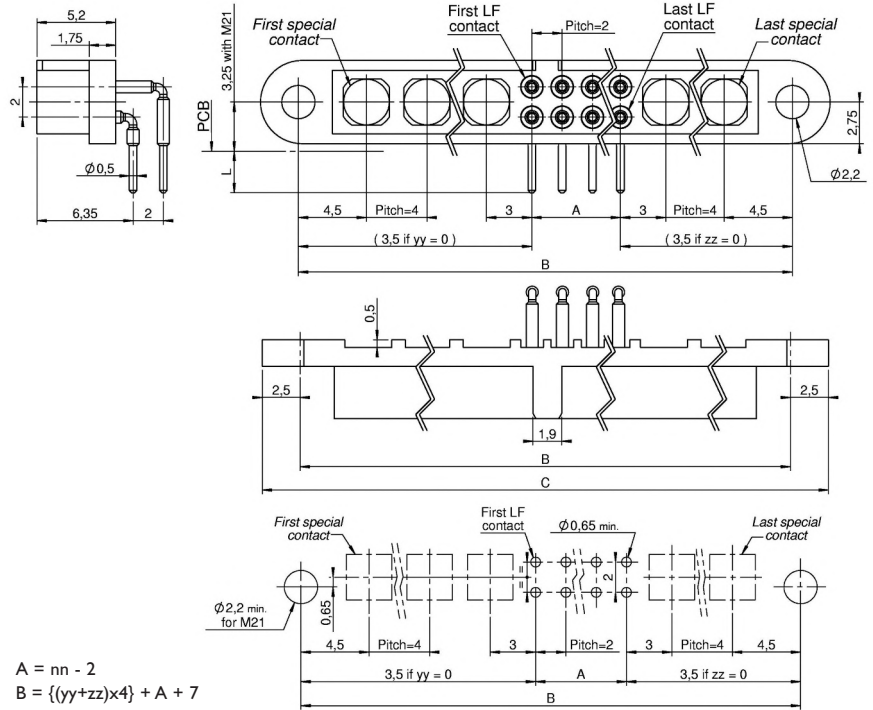
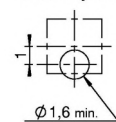
Type	L
V	3
VL	4,5

Pattern for special contact :

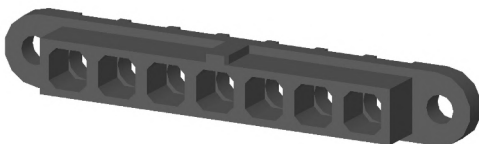
HF 30-2400-xx PCB lay-out



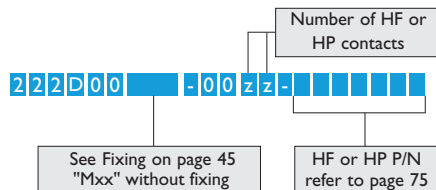
HP 30-4400-xx PCB lay-out



90° PCB FOR HP/HF CONTACTS ONLY

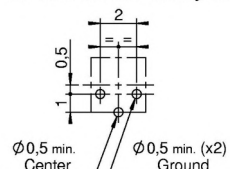


Part numbering :

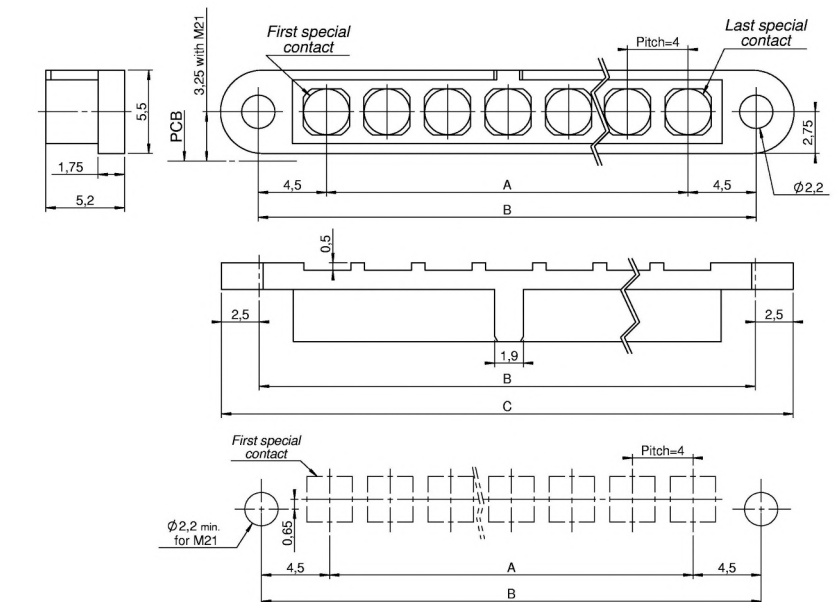
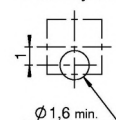


Pattern for special contact :

HF 30-2400-xx PCB lay-out



HP 30-4400-xx PCB lay-out



Special contacts min. : 02
max. : 15

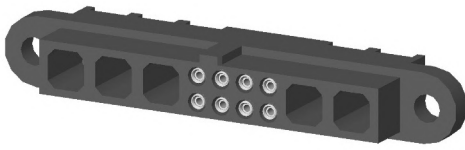
$A = (zz \times 4) - 4$
 $B = A + 9$
 $C = B + 5$

Refer to dimension table on cover page

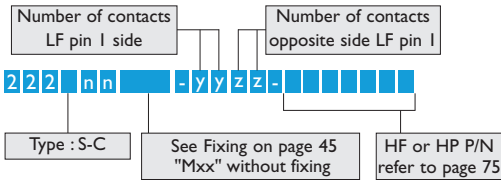
CMM 220

Female mixed-layout

CRIMP

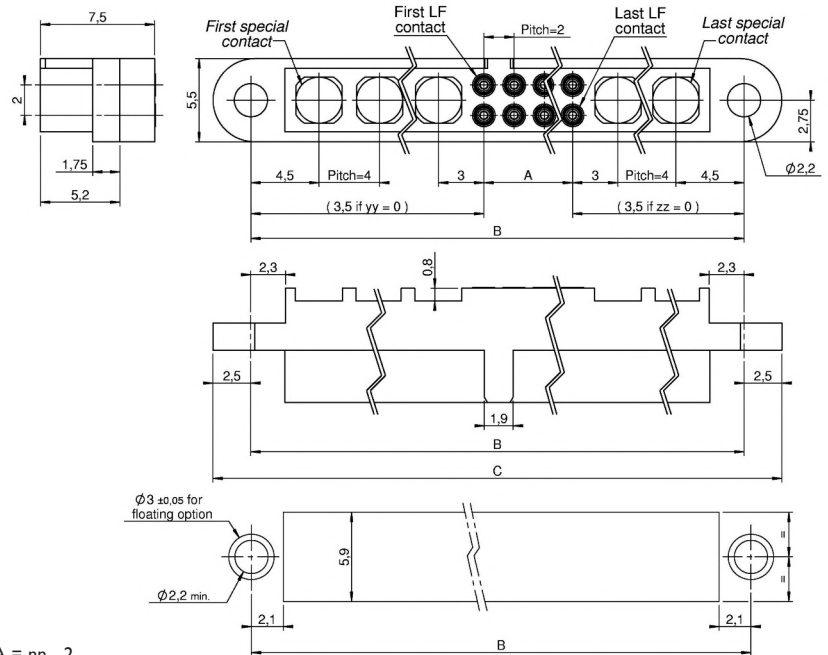
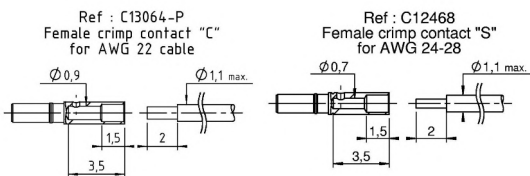


Part numbering :



nn = number of LF contacts

Type	Gauge
S	24-28
C	22



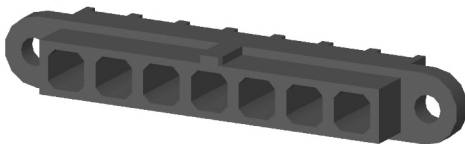
$$A = nn - 2$$

$$B = ((yy + zz) \times 4) + A + 7$$

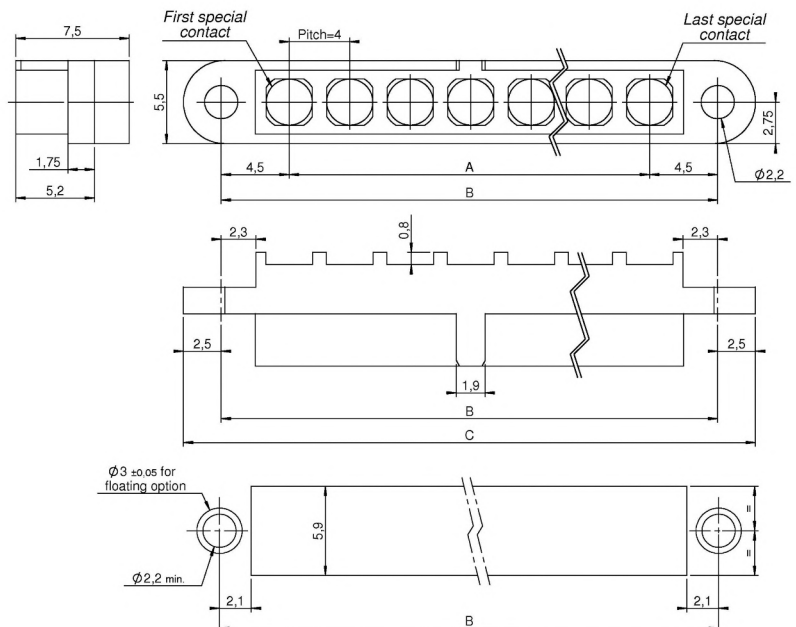
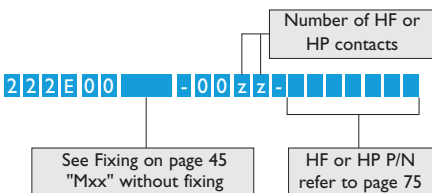
$$B_{max} = 65 \text{ mm}$$

$$C = B + 5$$

CRIMP FOR HP/HF CONTACTS ONLY



Part numbering :



$$A = (zz \times 4) - 4$$

$$B = A + 9$$

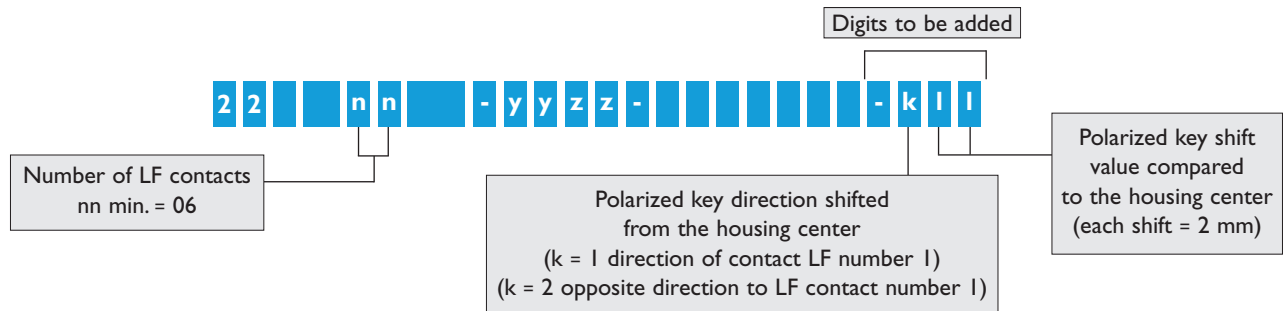
$$C = B + 5$$

Special contacts min. : 02
max. : 15

Refer to dimension table
on cover page

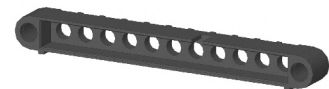
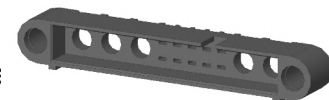
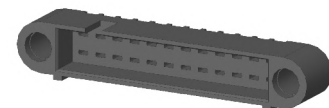
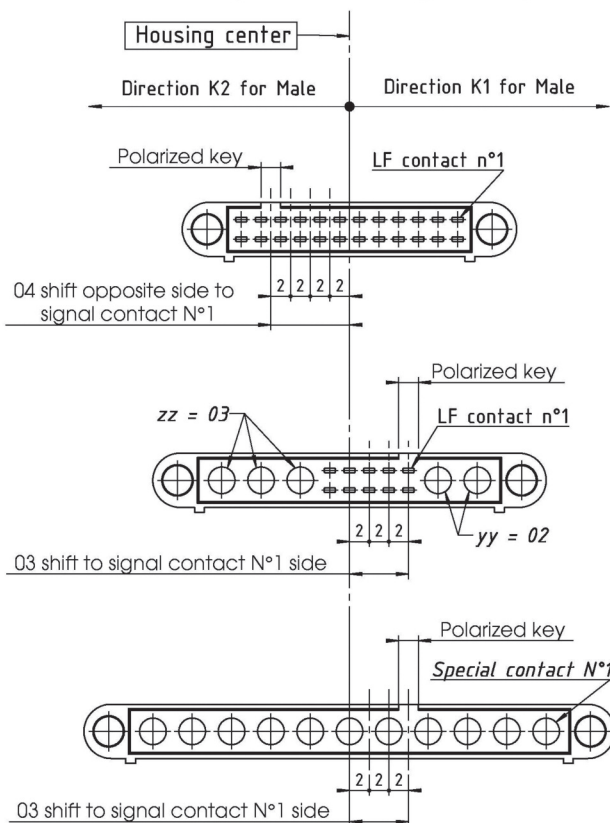
Part numbering with shifted polarization key position

PART NUMBERING



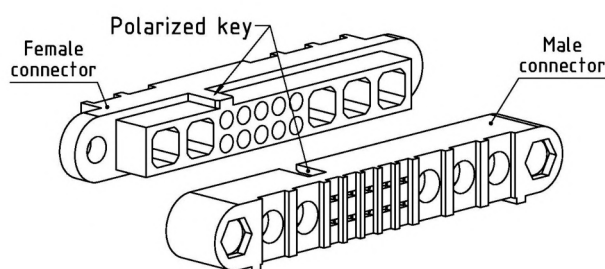
EXPLANATION

Shown looking onto mating face (Example with Male housing)



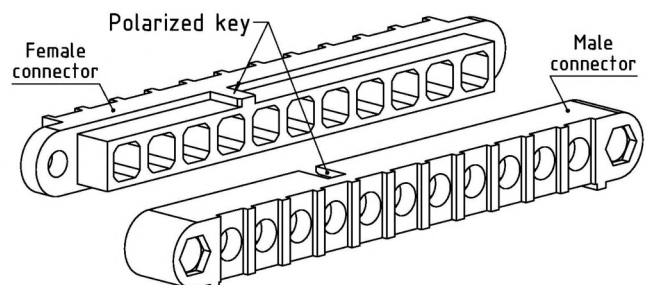
EXAMPLES

Connectors Male & Female CMM series 220
LF and special contacts mixed



Male : 221 10 F xx - 0203 - - - - - 103
Female : 222 10 Mxx - 0203 - - - - - 103

Connectors Male & Female CMM series 220
special contacts only



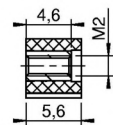
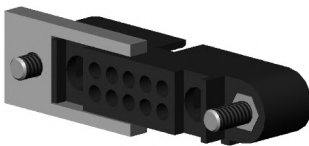
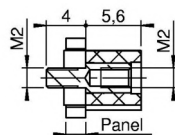
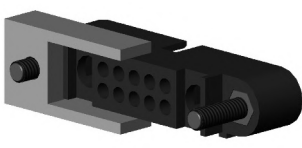
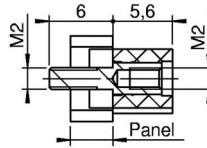
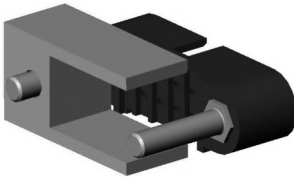
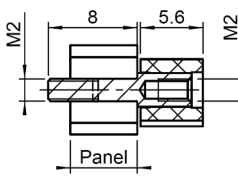
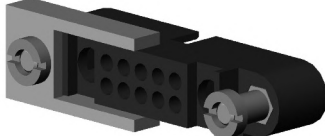
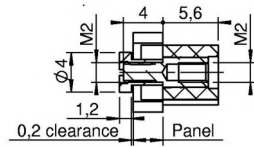
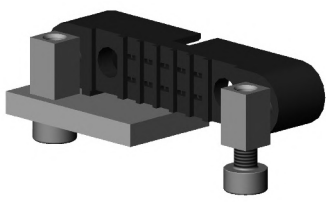
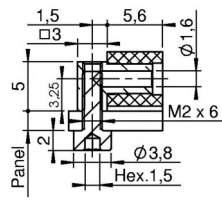
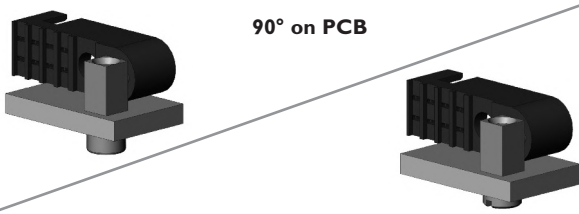
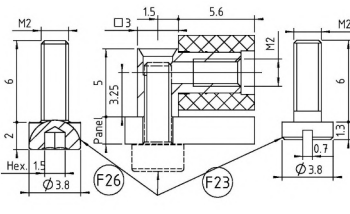
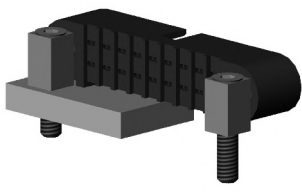
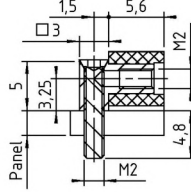
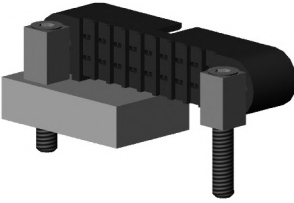
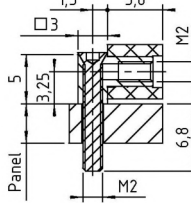
Male : 221 00 F xx - 0011 - - - - - 103
Female : 222 00 Mxx - 0011 - - - - - 103

Fixing hardware interconnection table for CMM 220

FEMALE CONNECTOR S CMM SERIES 220																																				
Type of contact in connector				PCB Contacts														Contacts on cable																		
Housing assembly	Type of PCB mount	PCB thickness (mm)	PCB Contacts														Contacts on cable																			
			Straight			90°						Card edge only HF	Card edge HF & LF	No fixing on PCB			Racking	Straight			90°						Floating	No fixing on PCB			Racking	With cover				
			0,8 min. 2 max.	1,5 min. 4 max.	6 max.	4 max.	2,5 max.	4,5 max.	1,6 max.	3,2 max.	F22			F24	F24L	F25		F26 F23	F30 F30H	F31 F31H	F63	F63L	F27	F34	F21	F60		F61	F62 F62H	0,8 min 2 max			1,5 min 4 max	6 max	4 max	2,5 max
Fixing	F22 F22H	F24 F24H	F24L	F25	F26 F23	F30 F30H	F31 F31H	F63	F63L	F27	F34	F21	F60	F61	F62 F62H	F22	F24	F24L	F25	F26 F23	F30 F30H	F31 F31H	F63	F63L	F2xx	F21	F60	F61	F62	F28						
PCB Contacts	Smooth	Straight	0,8 min. 2 max.	M12	OK	OK	OK	OK	OK	OK				OK	OK	OK			OK	OK	OK	OK	OK	OK		OK	OK			OK	OK					
				M12H	OK	OK	OK	OK	OK	OK	OK				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK		OK	OK			OK	OK					
			M12L	OK	OK	OK	OK	OK	OK	OK	OK				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK		OK	OK			OK	OK					
			M12LH	OK	OK	OK	OK	OK	OK	OK				OK	OK	OK		OK	OK	OK	OK	OK	OK	OK		OK	OK			OK	OK					
	Locked	90°	1,5 min. 2,5 max.	M49												OK															OK					
				M49H																											OK					
			1,5 min. 4 max.	M46								OK	OK			OK									OK	OK			OK							
				M46H								OK	OK			OK									OK	OK			OK							
		Without	1,6	M47							OK	OK			OK										OK	OK			OK							
				M47H								OK	OK			OK									OK	OK			OK							
			3,2	M21	OK	OK	OK		A	A	A							OK	OK	OK		A	A	A			OK	OK				B				
				M21L	OK	OK	OK		A	A	A							OK	OK	OK		A	A	A			OK	OK				B				
	Contacts on cable	Smooth	Straight	0,8 min. 2 max.	M12	OK	OK	OK	OK	OK	OK				OK	OK	OK			OK	OK	OK	OK	OK	OK		OK	OK			OK	OK				
					M12L	OK	OK	OK	OK	OK	OK	OK				OK	OK	OK	OK	OK	OK	OK	OK	OK	OK		OK	OK			OK	OK				
			Floating	1,5 min. 4 max.	M49												OK														OK					
					M1xx	OK	OK	OK	OK	OK	OK	OK				OK	OK	OK			OK	OK	OK	OK	OK		OK	OK			OK	OK				
Locked		90°	1,5 min. 2,5 max.	M46							OK	OK			OK									OK	OK			OK								
				M47								OK	OK			OK									OK	OK			OK							
			1,6	M21	OK	OK	OK		A	A	A									OK	OK	OK		A	A	A			OK	OK			B			
				M21L	OK	OK	OK		A	A	A									OK	OK	OK		A	A	A			OK	OK			B			
		Without	1,6	M48																										OK						
				M48M																									OK							
			3,2	M48L																									OK							
				M48L																									OK							
With cover		M16 M11	OK	OK	OK		OK	OK	OK					OK	OK	OK			OK	OK	OK		OK	OK	OK		OK	OK			OK					
			M18	OK	OK	OK		B	B	B					OK	OK	OK			B	B	B				OK	OK				OK					

Fixing for CMM 220 male

FIXING HARDWARE FOR CMM 220 MALE

REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
F21	Straight on PCB 		F21 : CMM male : Y-YL-TS-C (D-E : straight)
F22	Straight on PCB 0,8 min / 2 max 		F22 : CMM male : Y-TS-C (D-E : straight)
F22H			F22H : CMM male : Y-T (D : straight)
F24	Straight on PCB 1,5 min / 4 max 		F24 : CMM male : YL-TS-C (D-E : straight)
F24H			F24H : CMM male : YL-T (D : straight)
F24L	Straight on PCB 6 max 		F24L : CMM male : T-TL (D-E : straight)
F2xx xx = (PCB thickness + 0,2 mm) x 10 Example : for 3 mm PCB, the reference is F232 (3 + 0,2) x 10 = 32 xx = 32	Straight on PCB with floating option 		F2xx : CMM male : S-C (E : straight)
F25	90° on PCB 		F25 : CMM male : V-VL-R-S-C-E (D : 90°)
F26	90° on PCB 		F26/F23 : CMM male : V-VL-R-S-C-E (D : 90°)
F23			
F30	90° on PCB 2,5 max. 		F30 & F30H: CMM male : V-R-C-S-E (D : 90°)
F30H			
F31	90° on PCB 4,5 max. 		F31 & F31H: CMM male : VL-R-C-S-E (D : 90°)
F31H			

Please refer to the CMM Catalogue Guidelines for any other fixing not listed here.

Fixing for CMM 220 female

FIXING HARDWARE FOR CMM 220 FEMALE

HEXAGONAL NUT	STANDARD NUT	"W" CODE FOR ADDITIONAL WASHER

REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
M16 M11	Straight on PCB 		M16/M11 : CMM Female : Y-YL-TS-C-E (D : straight)
M12 M12H	Straight on PCB 0,8 min / 2 max 		M12 : CMM female : Y-TS-C (D-E : straight) M12H : CMM female : Y-T (D : straight)
M12L M12LH	Straight on PCB 1,5 min / 4 max 		M12L : CMM female : Y-TS-C (D-E : straight) M12LH : CMM female : YL-T (D : straight)
M1xx xx = (PCB thickness + 0,2 mm) x 10 Example : for 3 mm PCB, the reference is M132 (3 + 0,2) x 10 = 32 xx = 32	Straight on PCB with floating option 		M1xx : CMM female : S-C (E : straight)
M2I for PCB 1,6 mm (L = 4 mm)	90° on PCB 		M2I : CMM Female : V-R-S-C-E (D : 90°)
M2IL for PCB 3,2 mm (L = 5 mm)			M2IL : CMM Female : VL-R-S-C-E (D : 90°)
M18	Cover option 		M18 : CMM female : S-C (E : straight)

Please refer to the CMM Catalogue Guidelines for any other fixing not listed here.

Other fixing hardware for CMM 220

FIXING HARDWARE FOR CMM 220 FEMALE/MALE

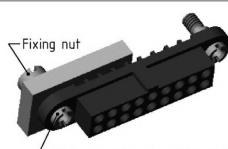
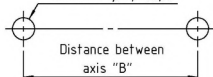
REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
M46	Straight on PCB 1,5 min. / 2,5 max.		M46 : CMM female : Y-TS-C (D-E : straight) M46H : CMM female : Y-T (D : straight)
M46H			
M47	Straight on PCB 1,5 min. / 4 max.		M47 : CMM female : YL-TS-C (D-E : straight) M47H : CMM female : YL-T (D : straight)
M47H			
M48 for PCB 1,6 mm (L = 3 mm)	90° on PCB		M48 / M48M / M48L : CMM female : V-VL-R-S-C-E (D : 90°)
M48M for PCB 2 mm (L = 4 mm)			
M48L for PCB 3,2 mm (L = 5 mm)			
M49	Straight on PCB		M49 : CMM female : Y-TS-C (D-E : straight) M49H : CMM female : Y-T (D : straight)
M49H			
F60	Straight on PCB		F60 : CMM male : Y-YL-TS-C-E (D : straight)
F61	Straight on PCB		F61 : CMM male : Y-YL-TS-C-E (D : straight)
F62	Racking		F62 : CMM male : Y-TS-C (D-E : straight) F62H : CMM male : Y-T (D : straight)
F62H			
F63 for PCB 1,6 mm	90° on PCB		F63 : CMM male : V-R-S-C-E (D : 90°) F63L : CMM male : VL-R-S-C-E (D : 90°)
F63L for PCB 3,2 mm			

M46 M46H M47 M47H

fixing hardware PCB layout

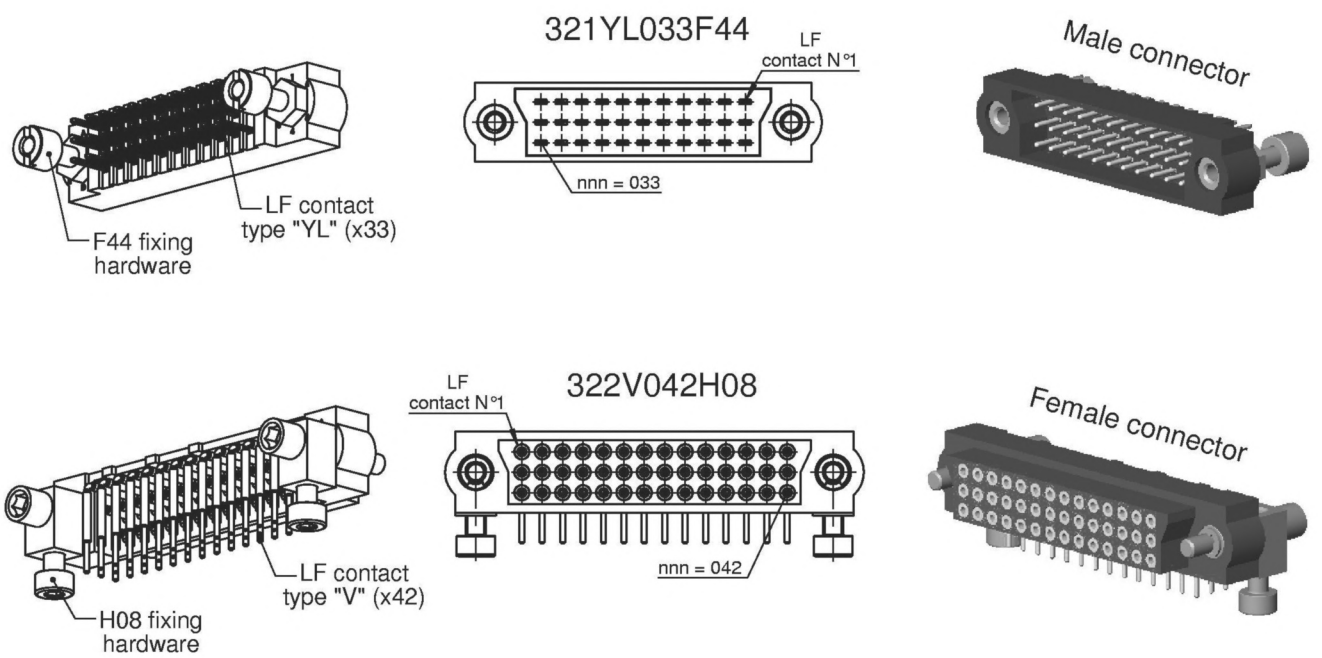
2 holes $\varnothing 2,8 \pm 0,05$

Distance between axis "B"



While screwing the fixing nut maintain the insert with screwdriver

CMM 320 with LF contacts



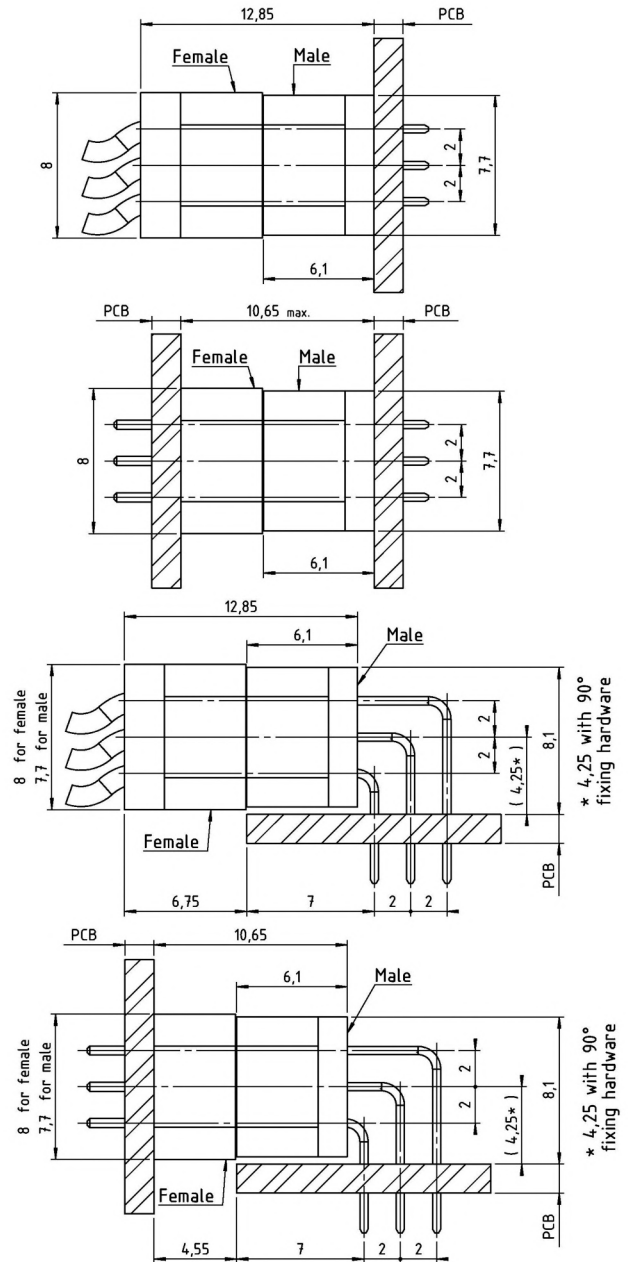
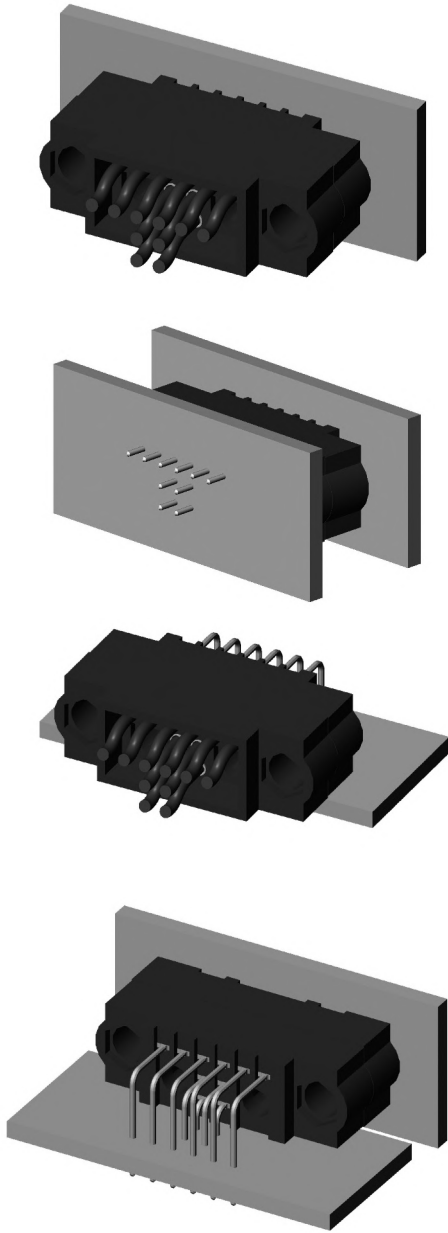
PART NUMBERING REMINDER

Code with Low Frequency contacts only				
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware
			n n n	
32	1 male	Refer to table on page 7	006 to 120	Refer to pages 69 to 74
	2 female			

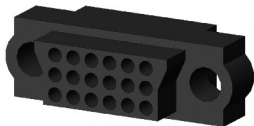
CMM 320

Configuration

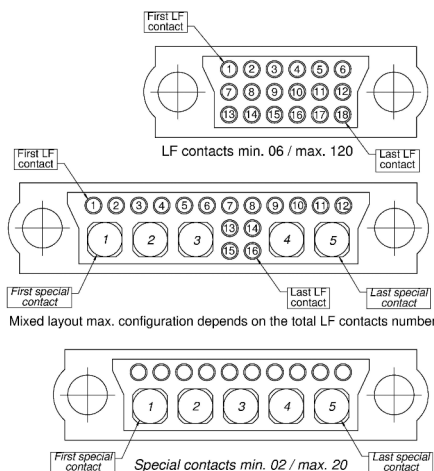
CONNECTOR SPACING



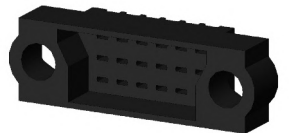
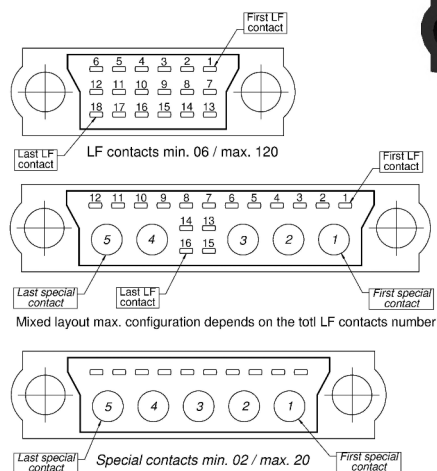
CONTACTS POSITIONS



Female connectors
(shown looking onto mating face)

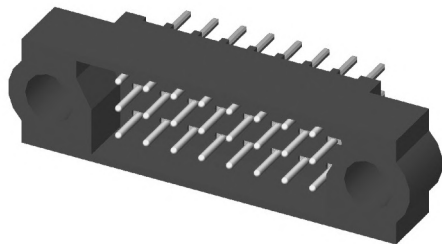


Male connectors
(shown looking onto mating face)



CMM 320 Male

STRAIGHT PCB FOR LF CONTACTS ONLY



Part numbering :

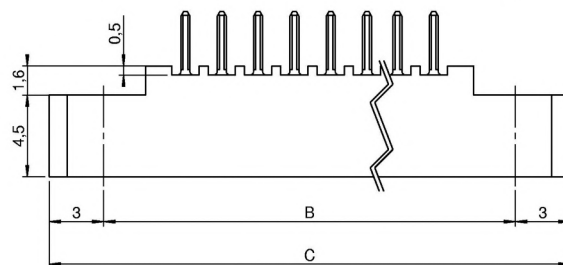
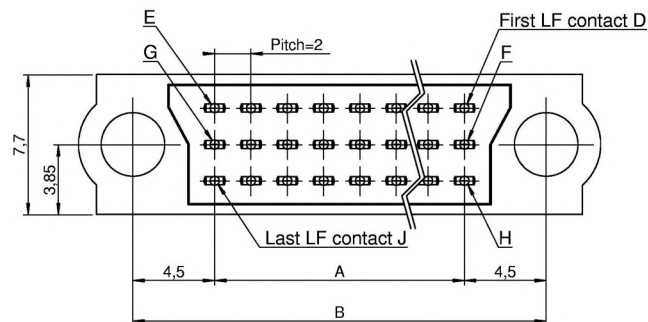
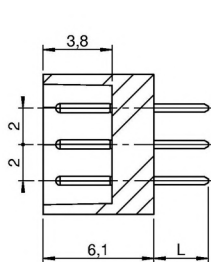
Type : Y-YL

3 2 1 n n n

See Fixing on pages 69 to 74
"Fxx" without fixing

nnn = number of LF contacts

Type	L
Y	3
YL	4,5



nnn min = 006

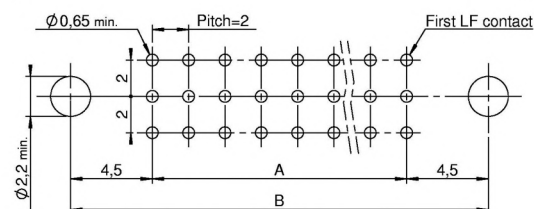
nnn max = 120

$$A = \left[\frac{nnn \times 2}{3} \right] - 2$$

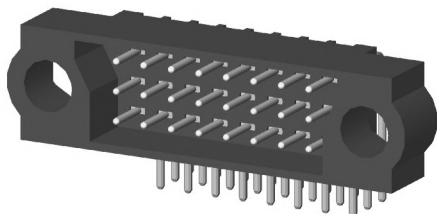
$$B = A + 9$$

$$C = A + 15$$

Refer to dimension table
on cover page



90° PCB FOR LF CONTACTS ONLY



Part numbering :

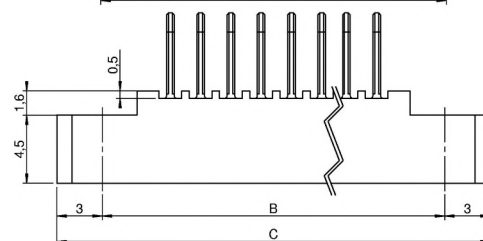
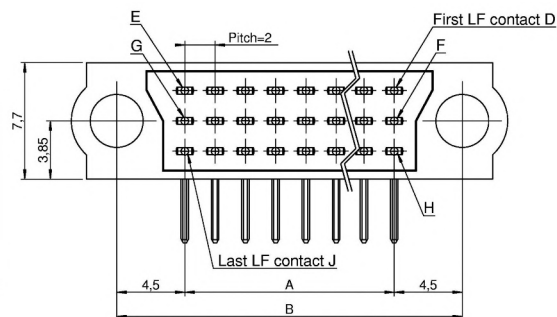
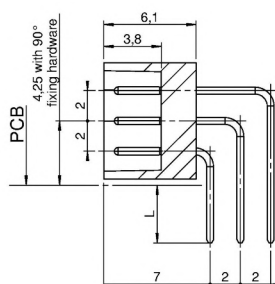
Type : V-VL

3 2 1 n n n

See Fixing on pages 69 to 74
"Fxx" without fixing

nnn = number of LF contacts

Type	L
V	3
VL	4,5



nnn min = 006

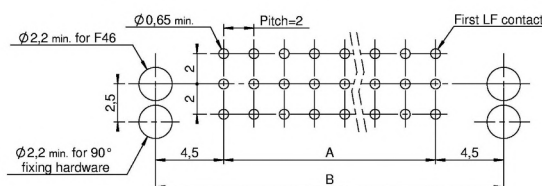
nnn max = 120

$$A = \left[\frac{nnn \times 2}{3} \right] - 2$$

$$B = A + 9$$

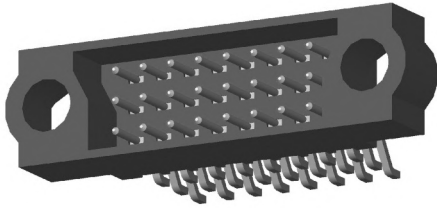
$$C = A + 15$$

Refer to dimension table
on cover page



CMM 320 Male

90° SMT FOR LF CONTACTS ONLY



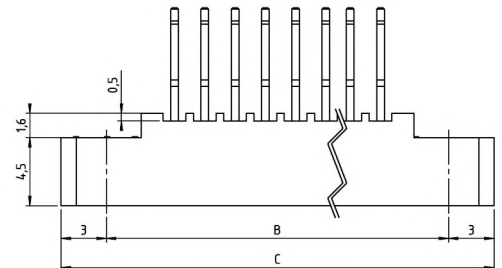
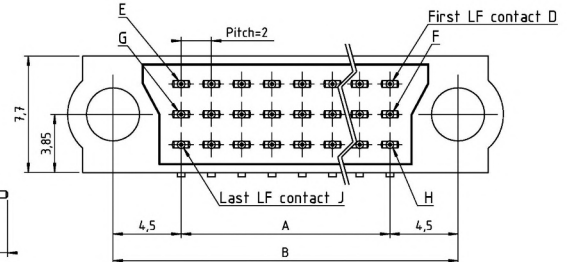
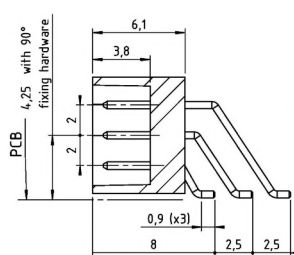
Part numbering :

321Rnnn

See Fixing on pages 69 to 74
"Fxx" without fixing

nnn = number of LF contacts

Optional: Packaging in reel available upon request



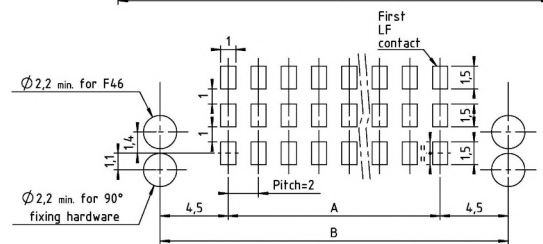
nnn min = 006
nnn max = 120

$$A = \left[\frac{nnn \times 2}{3} \right] - 2$$

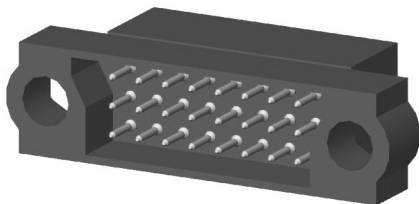
$$B = A + 9$$

$$C = A + 15$$

Refer to dimension table
on cover page



CRIMP FOR LF CONTACTS ONLY



Part numbering :

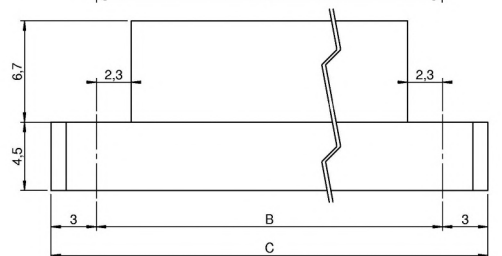
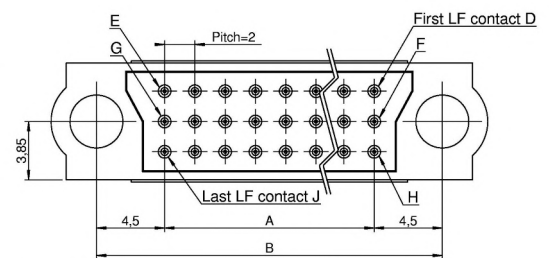
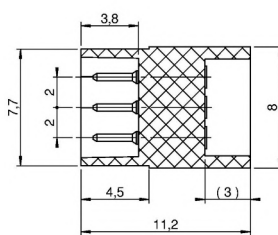
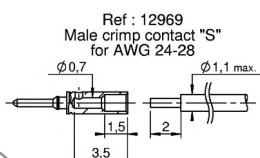
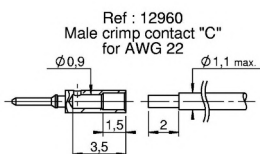
Type : S-C

321I nnn

See Fixing on pages 69 to 74
"Fxx" without fixing

nnn = number of LF contacts

Type	Gauge
S	24-28
C	22



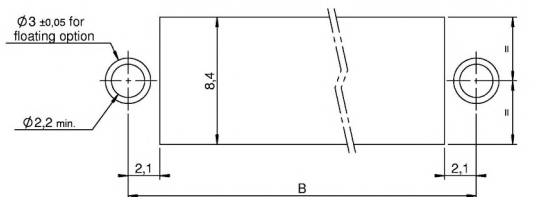
nnn min = 006
nnn max = 120

$$A = \left[\frac{nnn \times 2}{3} \right] - 2$$

$$B = A + 9$$

$$C = A + 15$$

Refer to dimension table
on cover page



CMM 320 Female

STRAIGHT PCB FOR LF CONTACTS ONLY

3 2 2 n n n

nnn = number of LF contacts

Technical drawings of the H01 connector showing dimensions and labels.

Top Left View: Dimensions include 8.35, 4.5, L, and three 2mm segments.

Top Right View: Dimensions include 8, 4, 4.5, A, 4.5, B. Labels include "First LF contact D", "Pitch=2", "Last LF contact J", and points F, E, G, H.

Middle Right View: Dimensions include 0.5 and Ø0.5.

Bottom Right View: Dimensions include 2, 2, 4.5, A, 4.5, B. Labels include "First LF contact", "Pitch=2", "Ø3,7 min. for H01", "Ø2,2 min.", and "Ø0,65 min."

Formulas:

$$nnn_{min} = 006$$

$$nnn_{max} = 120$$

$$A = \left[\frac{nnn \times 2}{3} \right] - 2$$

$$B = A + 9$$

$$C = A + 15$$

Refer to dimension table on cover page

90° PCB FOR LF CONTACTS ONLY



3 2 2 n n n

nnn = number of LF contacts

Technical drawings of the PCB connector assembly showing side, top, and bottom views with dimensions and labels.

Side View (Left): Shows the PCB (4.25 with 90° fixing hardware) and the connector assembly. Dimensions include 8.35, 4.5, 2, 2, L, 6.35, 2, 2, and a hole diameter of $\phi 0.5$.

Top View (Right): Shows the connector assembly with dimensions 8, 4, 4.5, A, 4.5, B, and 0.5. Labels include "First LF contact D", "Pitch=2", "Last LF contact J", "F", "E", "G", and "H".

Bottom View (Right): Shows the connector assembly with dimensions 3, B, C, and 3. A dimension of 0.5 is also indicated.

Bottom View (Left): Shows the connector assembly with dimensions 2.5, 2, 4.5, A, 4.5, B, and 0.65 min. Labels include "First LF contact", "Pitch=2", and "2,2 min. for 90° fixing hardware".

Formulas:

$$nnn \min = 006$$

$$nnn \max = 120$$

$$A = \left[\frac{nnn \times 2}{3} \right] - 2$$

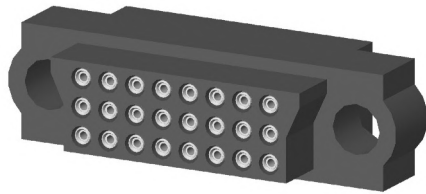
$$B = A + 9$$

$$C = A + 15$$

Refer to dimension table on cover page

CMM 320 Female

CRIMP FOR LF CONTACTS ONLY



Part numbering :

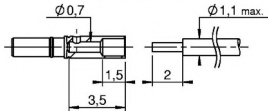
Type : S-C

3 2 2 n n n

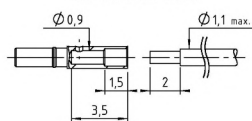
See Fixing on pages 69 to 74
"Mxx" without fixing

nnn = number of LF contacts

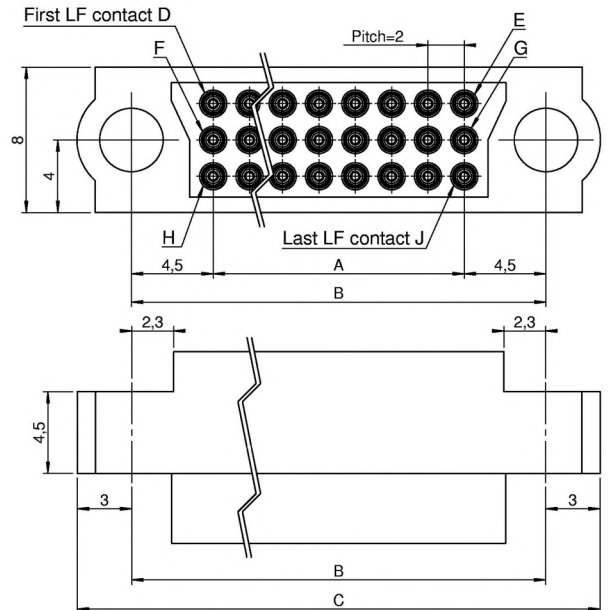
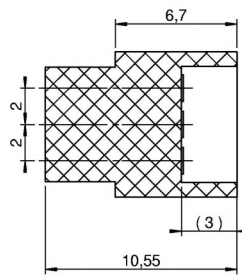
Ref : C12468
Female crimp contact "S"
for AWG 24-28



Ref : C13064-P
Female crimp contact "C"
for AWG 22 cable



Type	Gauge
S	24-28
C	22



nnn min = 006

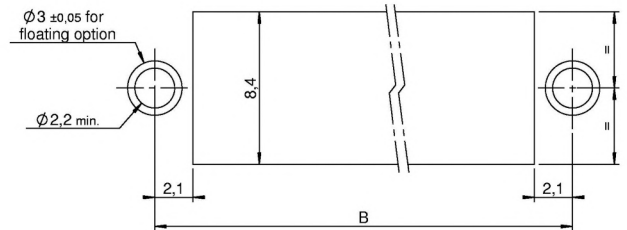
nnn max = 120

$$A = \left[\frac{nnn \times 2}{3} \right] - 2$$

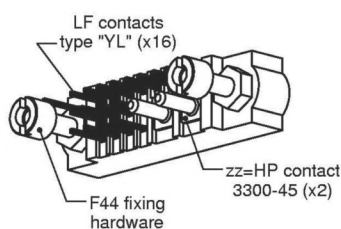
$$B = A + 9$$

$$C = A + 15$$

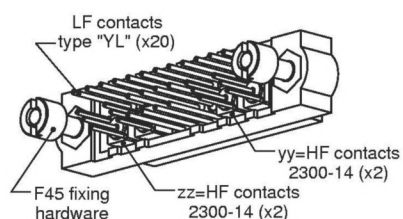
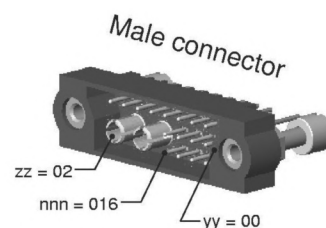
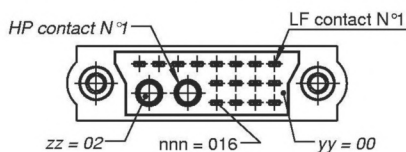
Refer to dimension table
on cover page



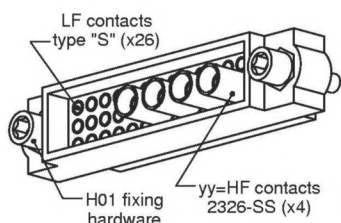
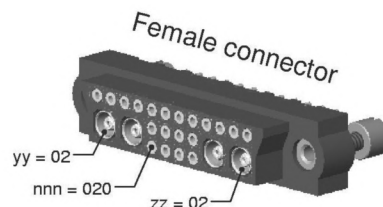
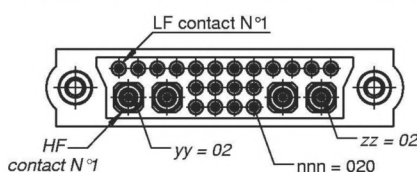
CMM 320 with mixed-layout



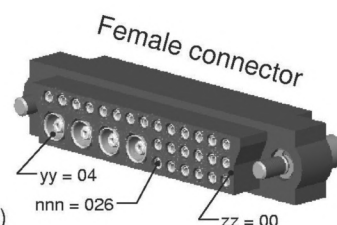
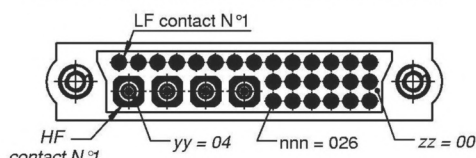
321YL016F44-0002-330045



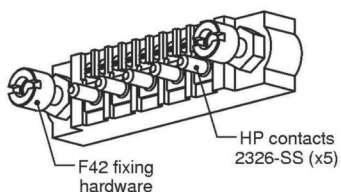
322YL020F45-0202-230014



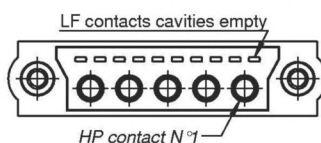
322S026H01-0400-2326SS



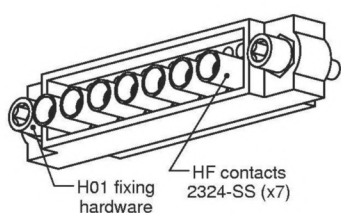
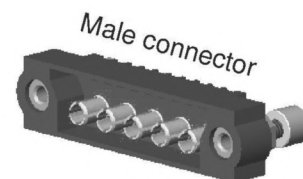
(HF contact are supplied -not fitted- under P/N 30-2326-SS)



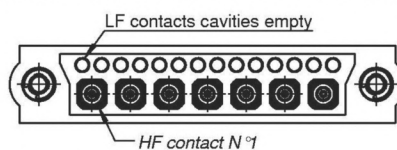
321D000F42-0005-3300CMM



"D" stated in P/N for connectors on PCB with only special contacts.

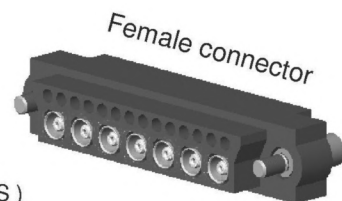


322E000H01-0007-2324SS



(HF contact are supplied -not fitted- under P/N 30-2324-SS)

"E" stated in P/N for connectors on cable with only special contacts.



PART NUMBERING REMINDER

Code with Low Frequency contacts only					Additional code for mixed-layout connector (HF/HP)			
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware	Number of HF/HP contacts pin 1 side (LF contact number 1)	Number of HF/HP contacts opposite to LF contact number 1	HF/HP Contact Type	

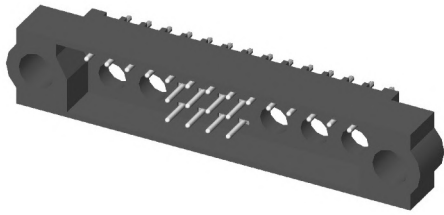
3
2
1
n
n
n
-
y
y
z
z
-

3 rows	32	1 male	Refer to table on page 7	006 to 120	Refer to pages 69 to 74	Depends upon the number of LF contacts	HF/HP 30 please refer to pages 75 to 94
		2 female				HF / HP : 20 contacts max. Type of HF/HP contact : please refer to pages 8-9	

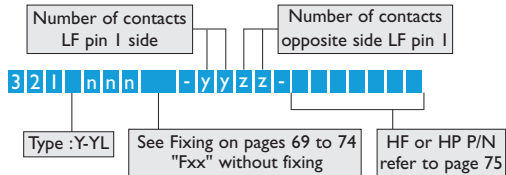
CMM 320

Male mixed-layout

STRAIGHT PCB



Part numbering :

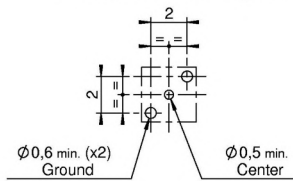


nnn = number of LF contacts

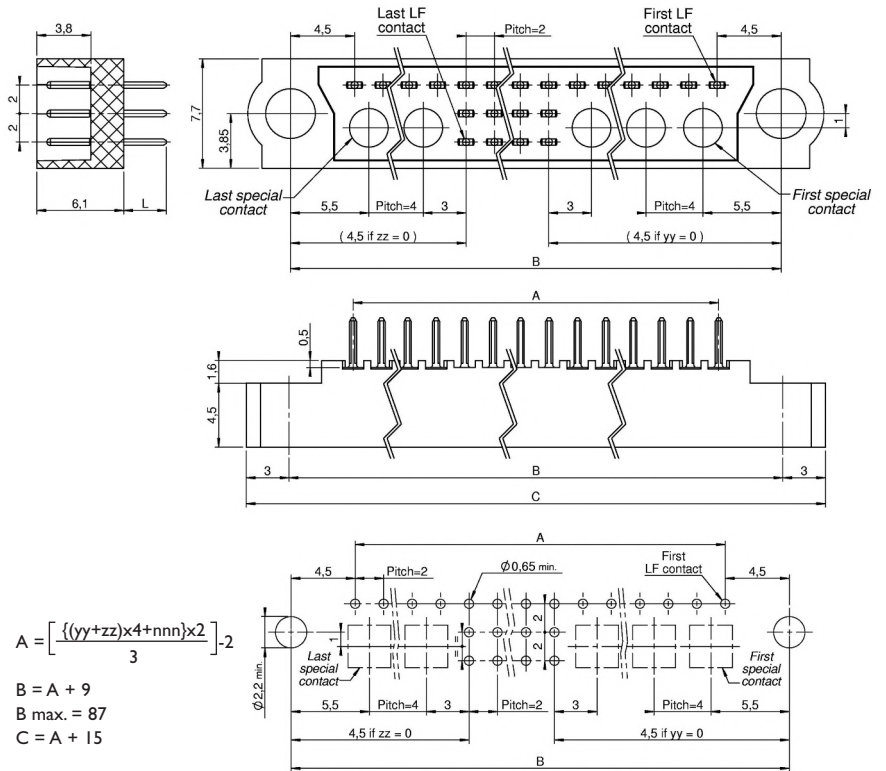
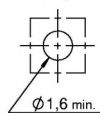
Type	L
Y	3
YL	4,5

Pattern for special contact :

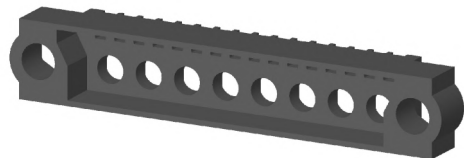
HF 30-1300-xx PCB lay-out



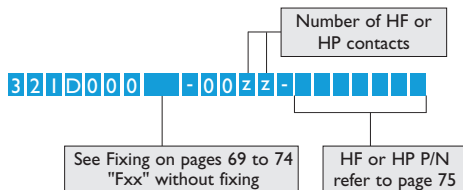
HP 30-3300-xx PCB lay-out



STRAIGHT PCB FOR HP/HF CONTACTS ONLY

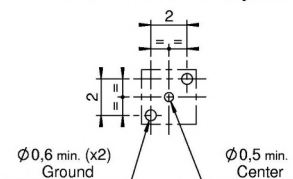


Part numbering :

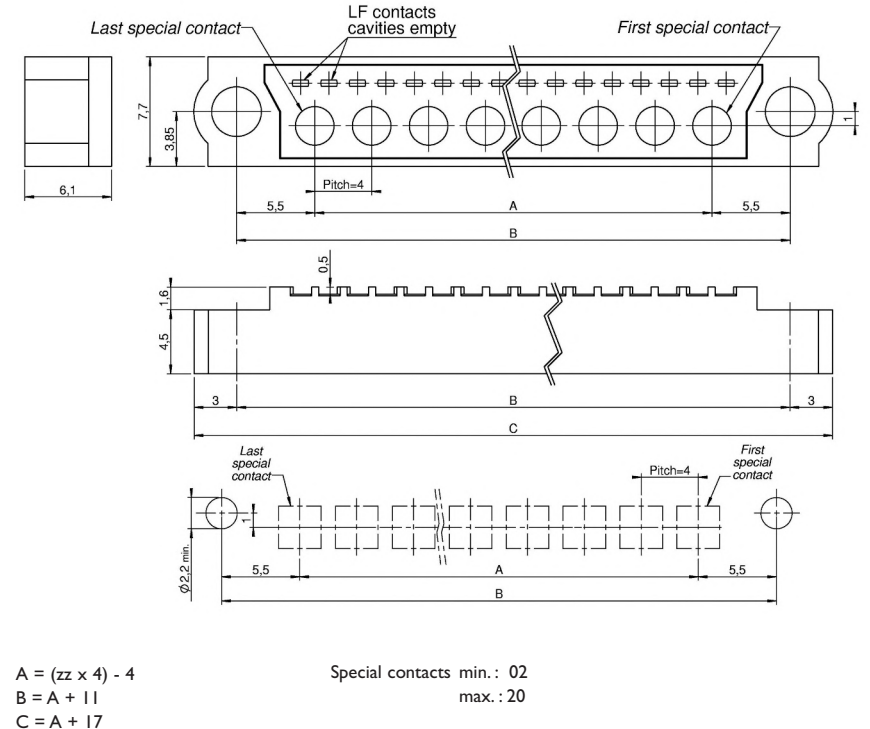
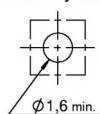


Pattern for special contact :

HF 30-1300-xx PCB lay-out



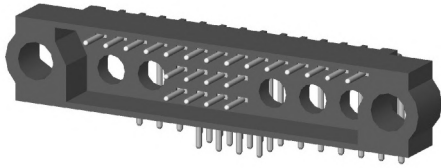
HP 30-3300-xx PCB lay-out



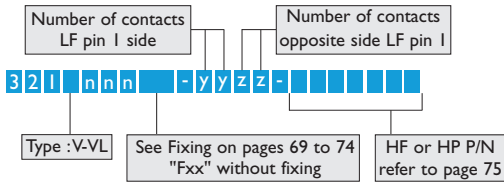
CMM 320

Male mixed-layout

90° PCB



Part numbering :

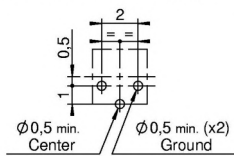


nnn = number of LF contacts

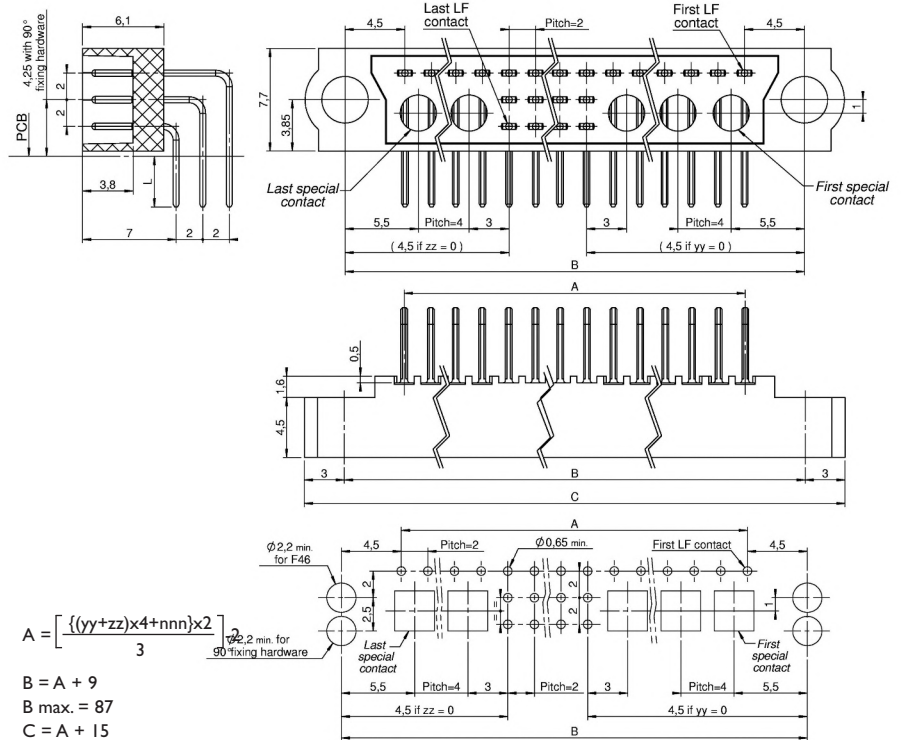
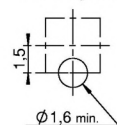
Type	L
V	3
VL	4,5

Pattern for special contact :

HF 30-1400-xx PCB lay-out



HP 30-3400-xx PCB lay-out



Special contacts mounted

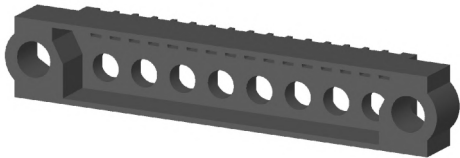
$$A = \left[\frac{((yy+zz) \times 4 + nnn) \times 2}{3} \right] + 2.2 \text{ min. for } 90^\circ \text{ fixing hardware}$$

$$B = A + 9$$

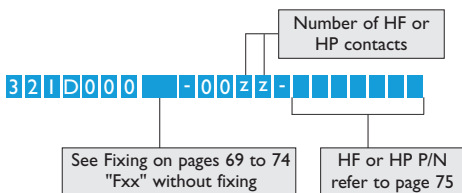
$$B \text{ max.} = 87$$

$$C = A + 15$$

90° PCB FOR HP/HF CONTACTS ONLY

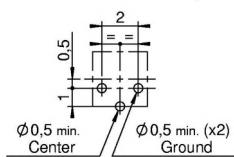


Part numbering :

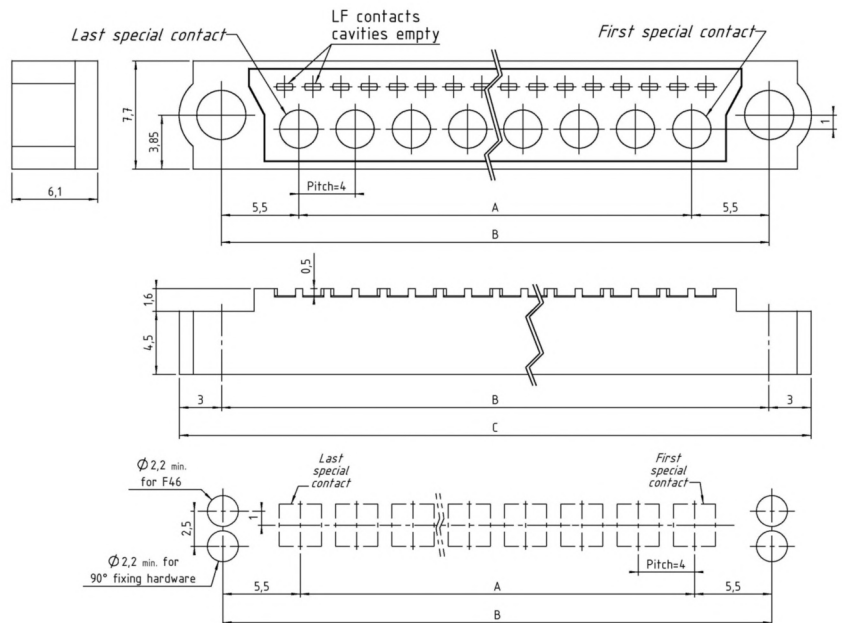
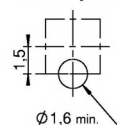


Pattern for special contact :

HF 30-1400-xx PCB lay-out



HP 30-3400-xx PCB lay-out



$$A = (zz \times 4) - 4$$

$$B = A + 11$$

$$C = A + 17$$

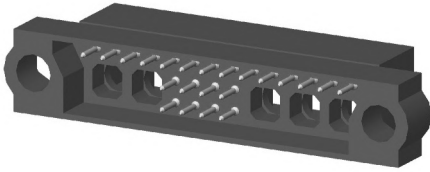
Special contacts min. : 02

max. : 20

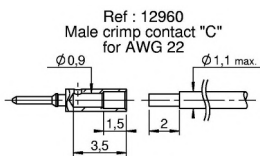
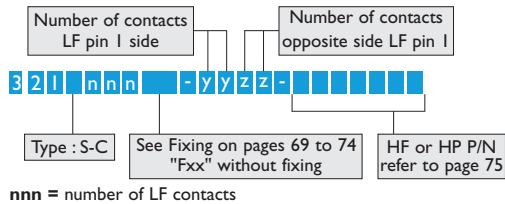
CMM 320

Male mixed-layout

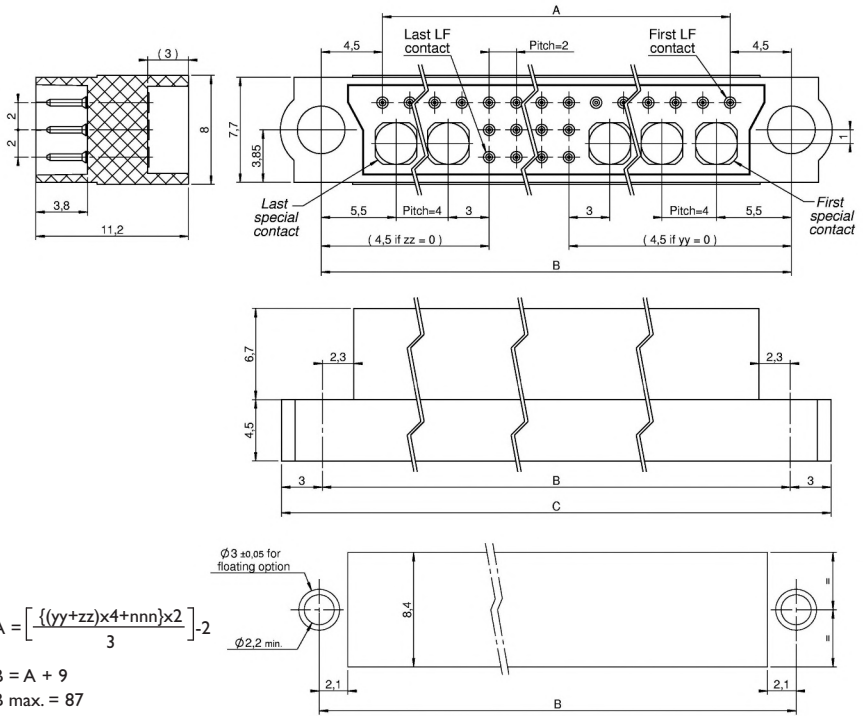
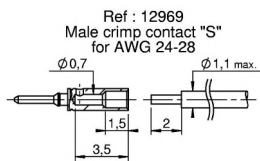
CRIMP



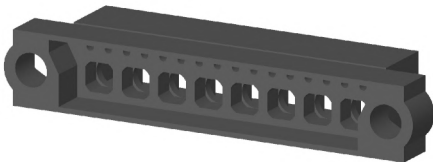
Part numbering :



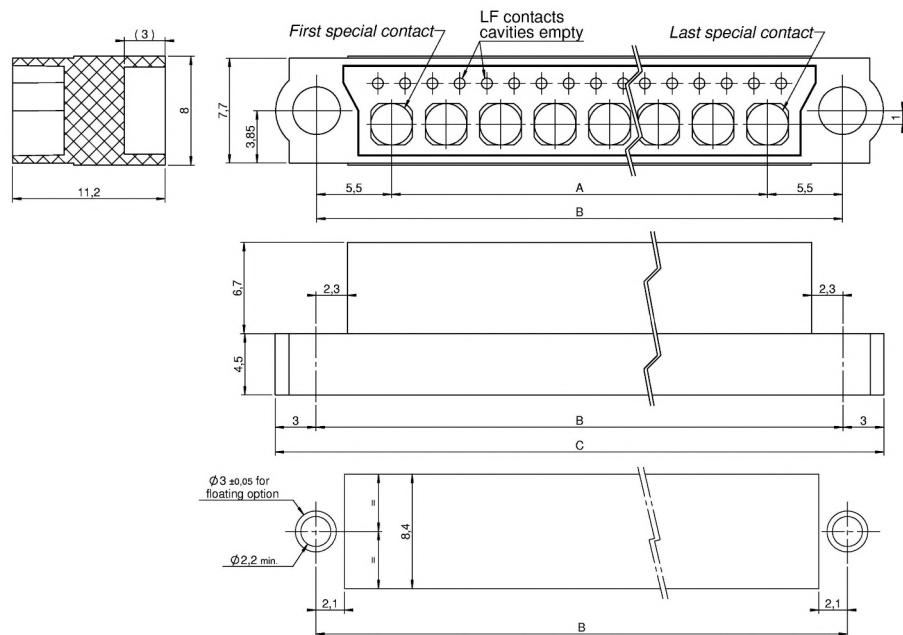
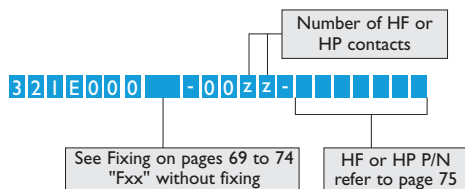
Type	Gauge
S	24-28
C	22



CRIMP FOR HP/HF CONTACTS ONLY



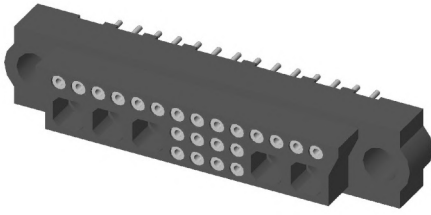
Part numbering :



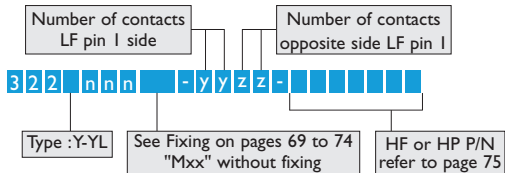
CMM 320

Female mixed-layout

STRAIGHT PCB



Part numbering :



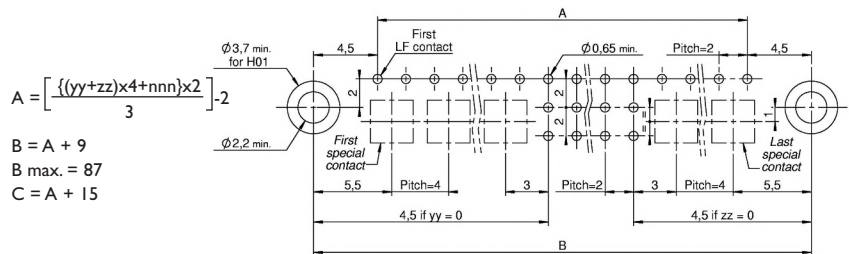
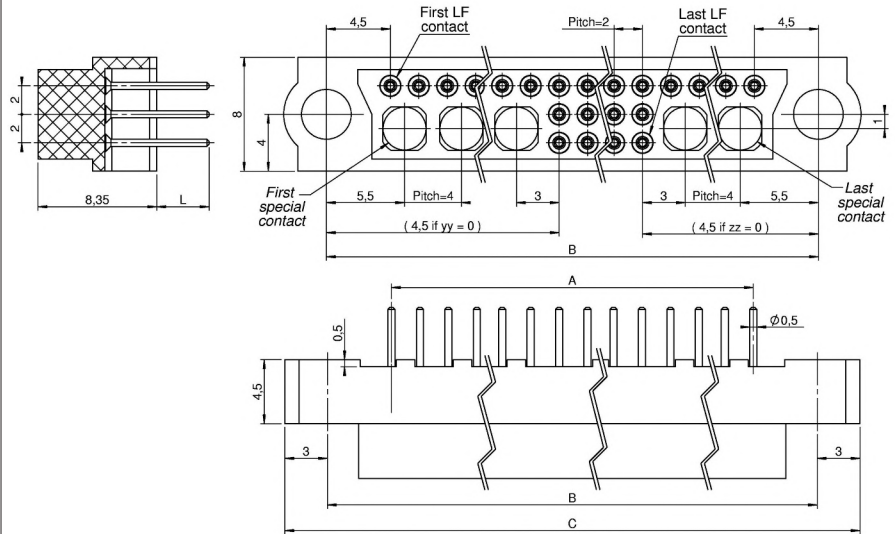
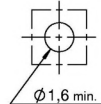
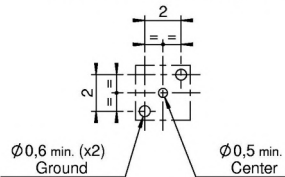
nnn = number of LF contacts

Type	L
Y	3
YL	4,5

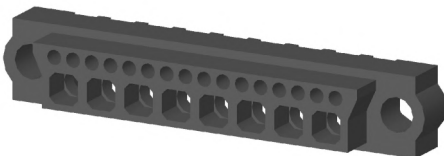
Pattern for special contact :

HF 30-2300-xx PCB lay-out

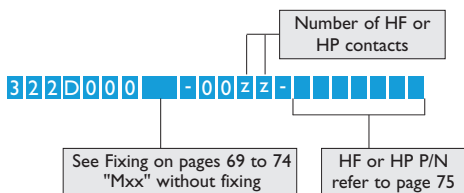
HP 30-4300-xx PCB lay-out



STRAIGHT PCB FOR HP/HF CONTACTS ONLY



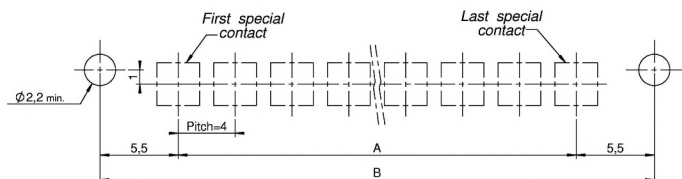
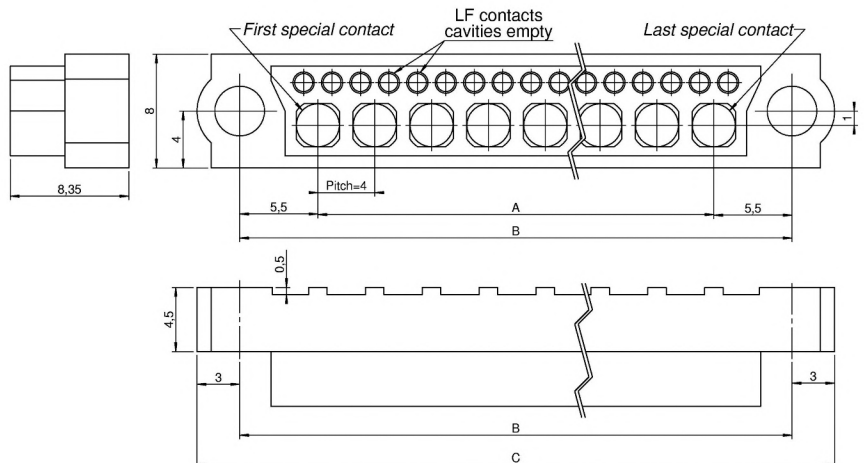
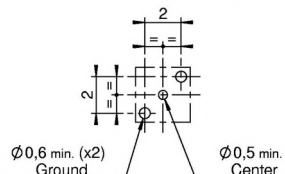
Part numbering :



Pattern for special contact :

HF 30-2300-xx PCB lay-out

HP 30-4300-xx PCB lay-out

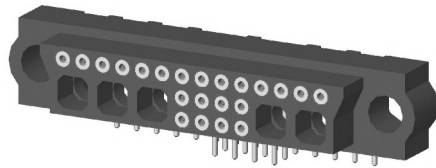


Special contacts min. : 02
max. : 20

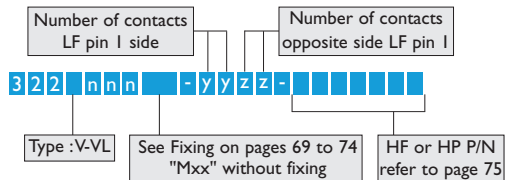
CMM 320

Female mixed-layout

90° PCB



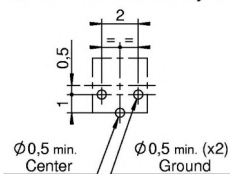
Part numbering :



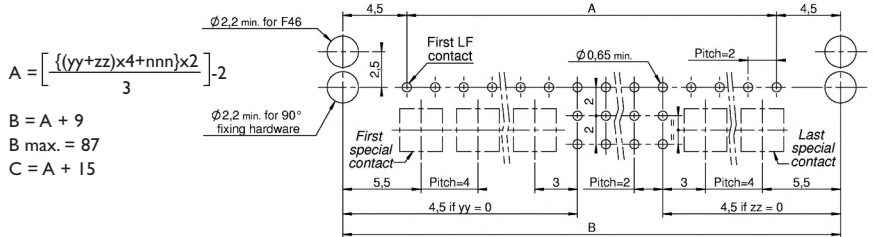
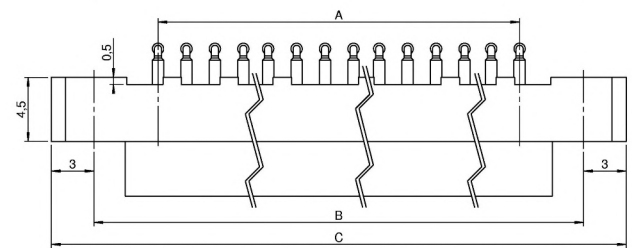
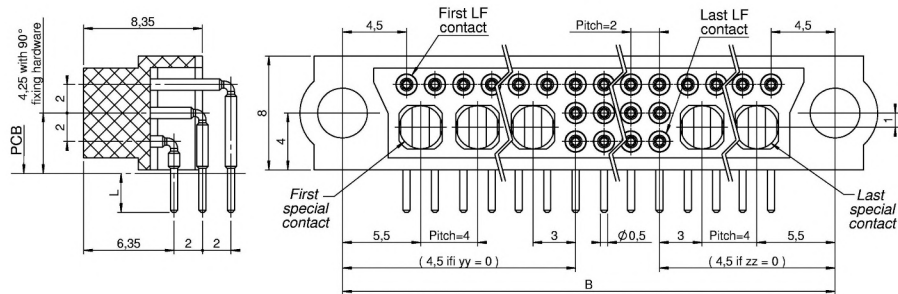
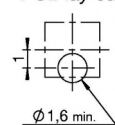
Type	L
V	3
VL	4,5

Pattern for special contact :

HF 30-2400-xx PCB lay-out



HP 30-4400-xx PCB lay-out



Special contacts mounted

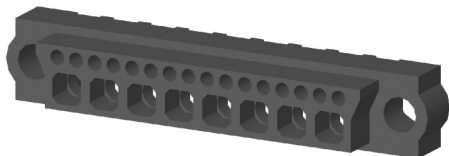
$$A = \left[\frac{(yy+zz) \times 4 + nnn}{3} \right] \times 2$$

$$B = A + 9$$

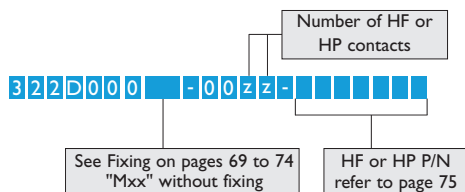
$$B \text{ max.} = 87$$

$$C = A + 15$$

90° PCB FOR HP/HF CONTACTS ONLY

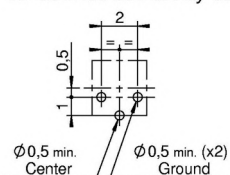


Part numbering :

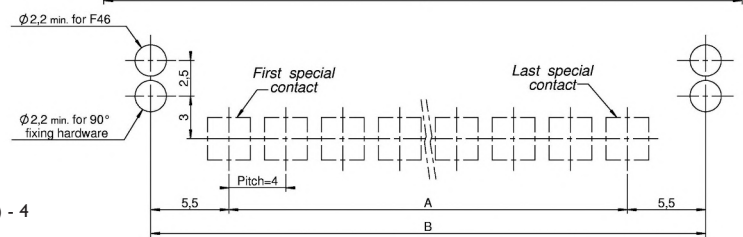
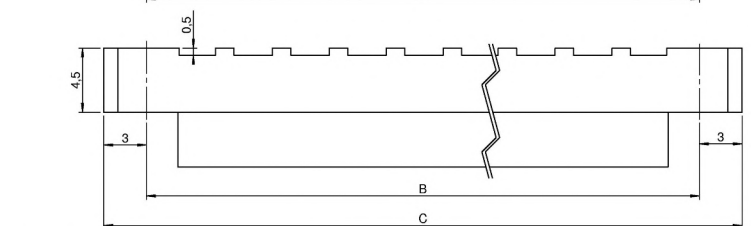
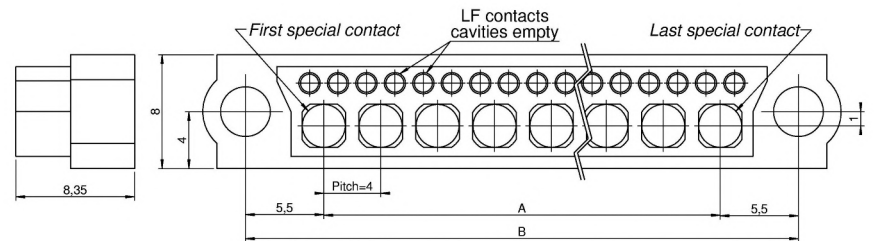
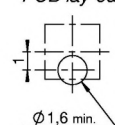


Pattern for special contact :

HF 30-2400-xx PCB lay-out



HP 30-4400-xx PCB lay-out



Special contacts min. : 02
max. : 20

$$A = (zz \times 4) - 4$$

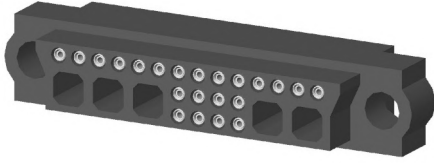
$$B = A + 11$$

$$C = A + 17$$

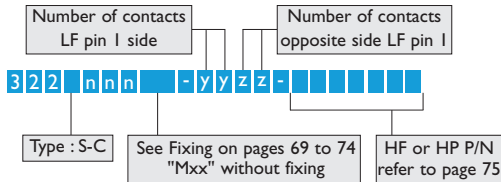
CMM 320

Female mixed-layout

CRIMP

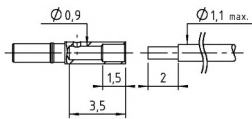


Part numbering :

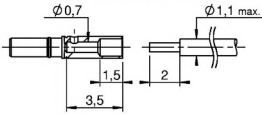


nnn = number of LF contacts

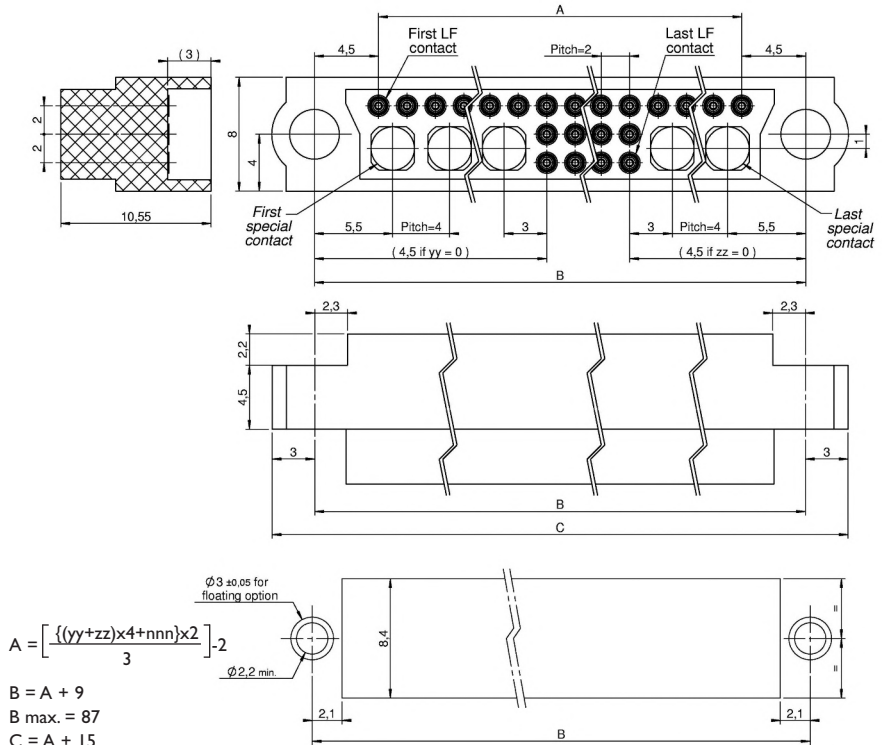
Ref : C13064-P
Female crimp contact "C"
for AWG 22 cable



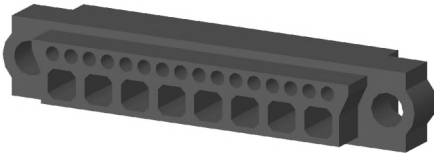
Ref : C12468
Female crimp contact "S"
for AWG 24-28



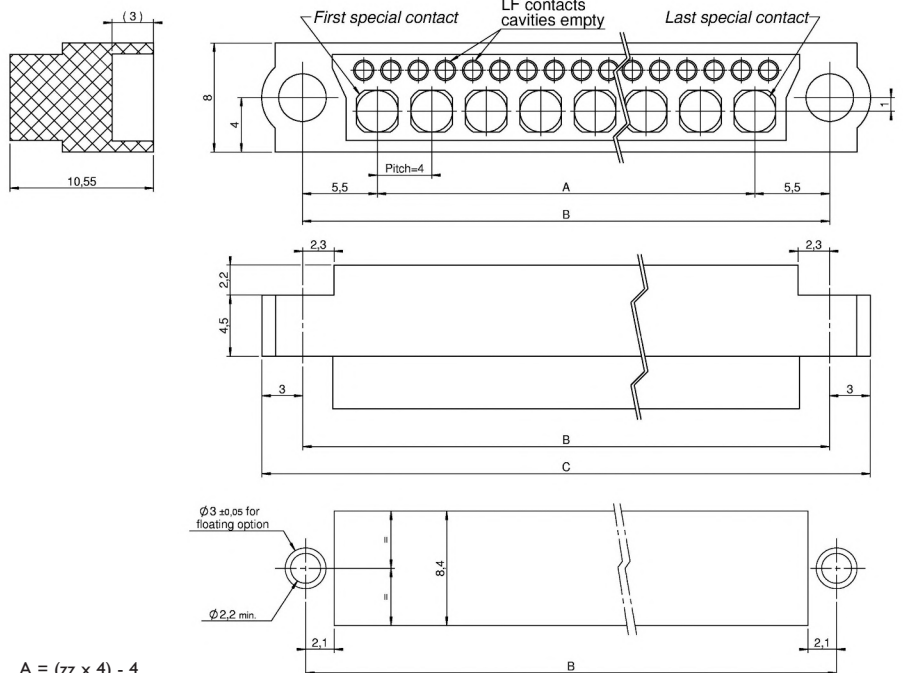
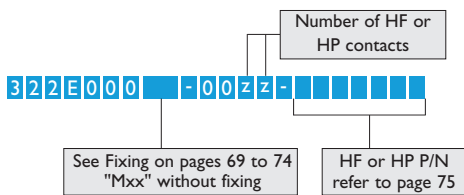
Type	Gauge
S	24-28
C	22



CRIMP FOR HP/HF CONTACTS ONLY



Part numbering :

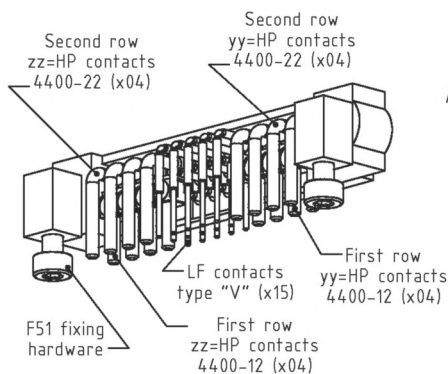
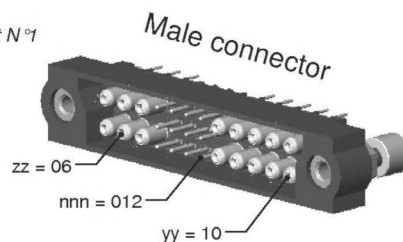
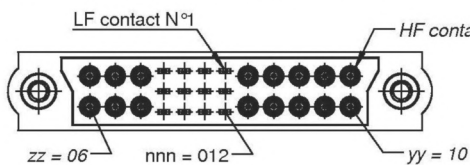
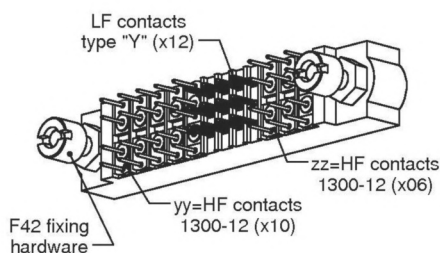


$A = (zz \times 4) - 4$
 $B = A + 11$
 $C = A + 17$

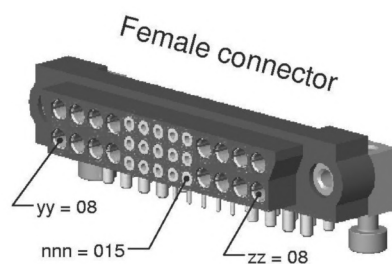
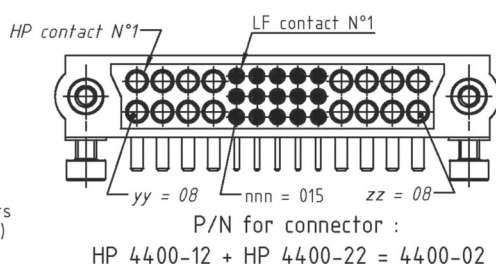
Special contacts min. : 02
max. : 20

CMM 340

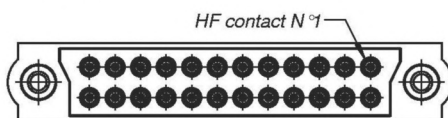
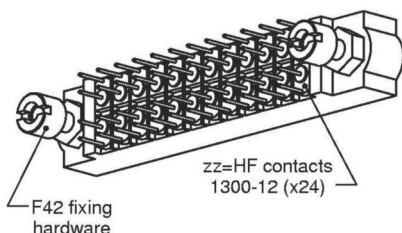
341Y012F42-1006-130012



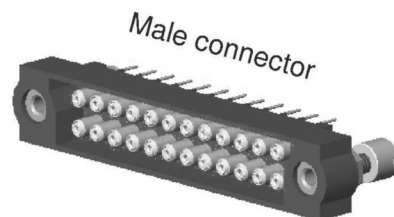
342V015F51-0808-440002



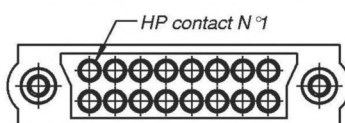
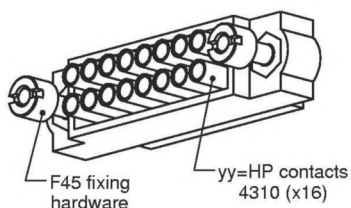
341D000F42-0024-130012



"D" stated in P/N for connectors on PCB with only special contacts.

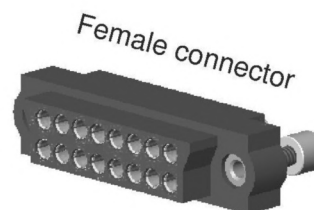


342E000F45-0016-4310



(HP contacts are supplied -not fitted- under P/N 22-4310)

"E" stated in P/N for connectors on cable with only special contacts.



PART NUMBERING REMINDER

Code with Low Frequency contacts only					Additional code for mixed-layout connector (HF/HP)		
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware	Number of HF/HP contacts pin 1 side (LF contact number 1)	Number of HF/HP contacts opposite to LF contact number 1	HF/HP Contact Type

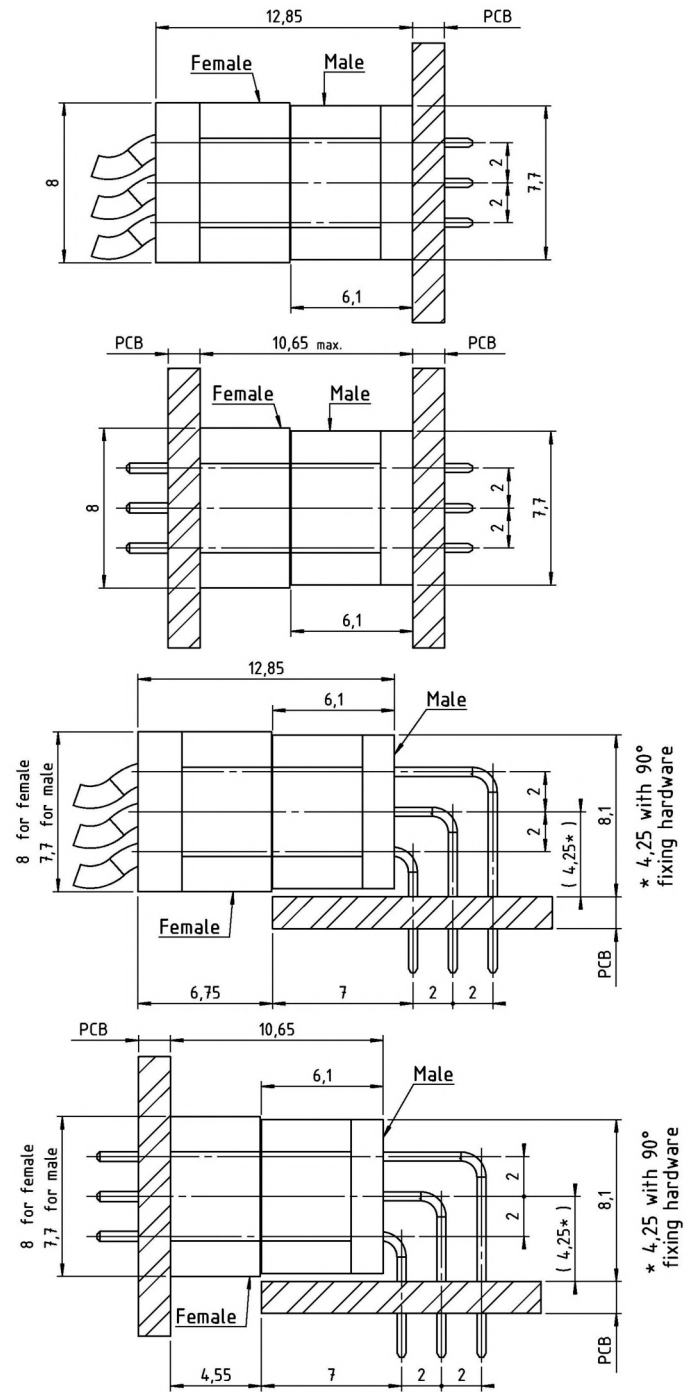
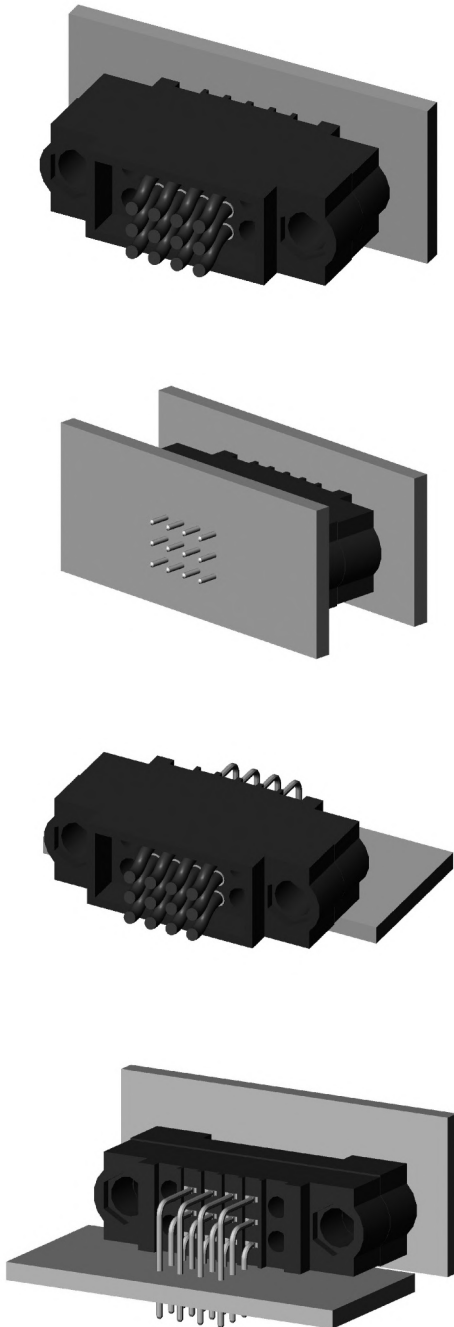
3
4
1
n
n
n
-
y
y
z
z
-

3 rows	34	1 male	Refer to table on page 7	Refer to the series 320	Refer to pages 69 to 74	Depends upon the number of LF contacts	HP/HP 22 please refer to pages 95 to 102
		2 female				HF / HP : 64 contacts max. Type of HF/HP contact : please refer to pages 10-11	

CMM 340

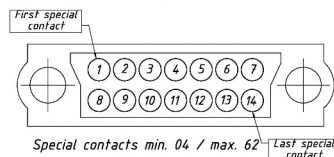
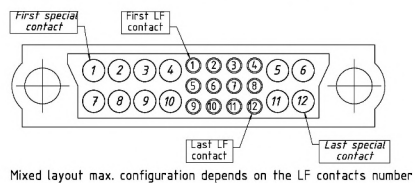
Configuration

CONNECTOR SPACING

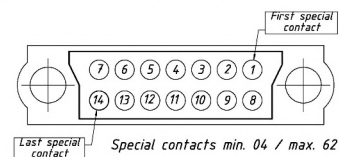
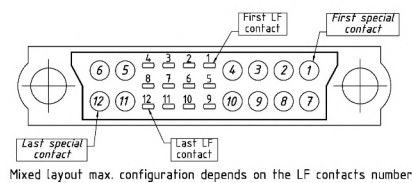


CONTACTS POSITIONS

Female connectors
(shown looking onto mating face)



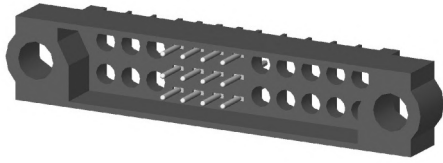
Male connectors
(shown looking onto mating face)



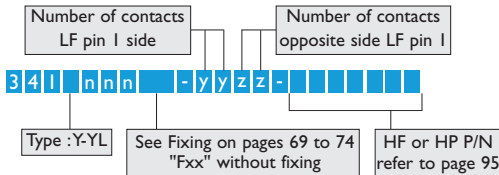
CMM 340

Male mixed-layout

STRAIGHT PCB



Part numbering :

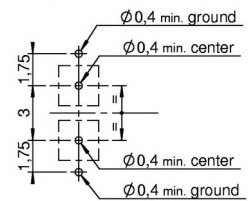


nnn = number of LF contacts

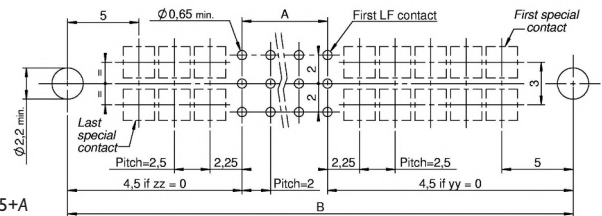
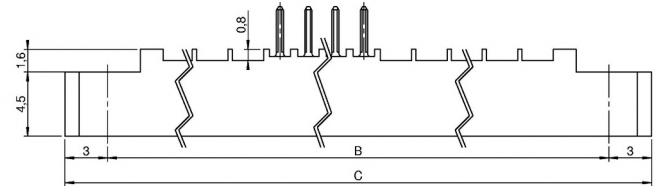
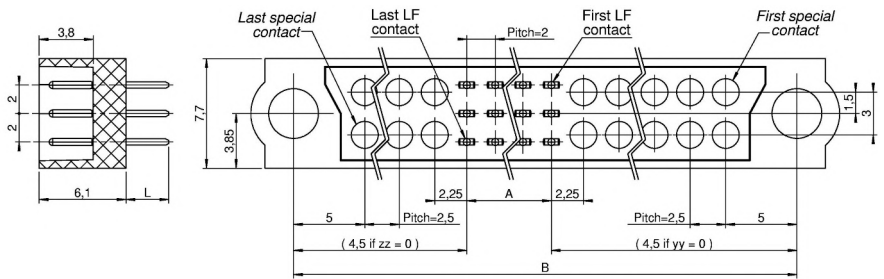
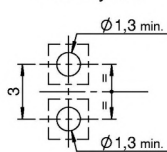
Type	L
Y	3
YL	4,5

Pattern for special contact :

HF 22-1300-xx PCB Lay-out



HP 22-3300-xx
PCB Lay-out



$$A = \left\{ \frac{(nnn \times 2)}{3} \right\} - 2$$

if yy and zz $\neq$ 0 :

$$B = \left\{ \left(\frac{(yy) + (zz)}{2} \right) - 2 \right\} \times 2,5 + 14,5 + A$$

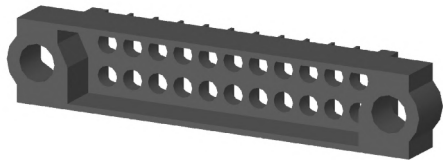
if yy or zz = 0 :

$$B = \left\{ \left(\frac{(yy) \text{ or } (zz)}{2} \right) - 1 \right\} \times 2,5 + 11,75 + A$$

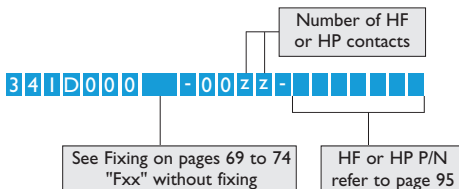
B max. = 87

C = B + 6

STRAIGHT PCB FOR HP/HF CONTACTS ONLY

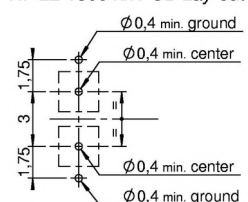


Part numbering :

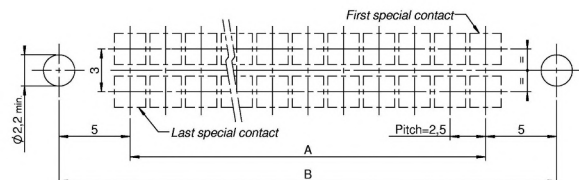
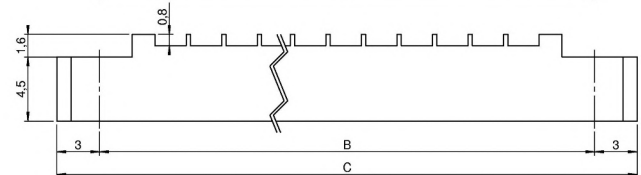
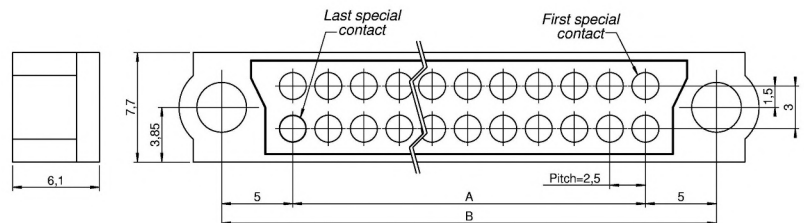
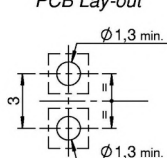


Pattern for special contact :

HF 22-1300-xx PCB Lay-out



HP 22-3300-xx
PCB Lay-out



$$A = \left(\frac{(zz \times 2,5)}{2} \right) - 2,5$$

Special contacts min. : 04
max. : 64

B = A + 10

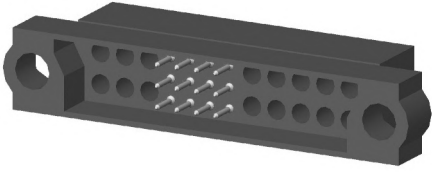
C = B + 6

Refer to dimension table
on cover page

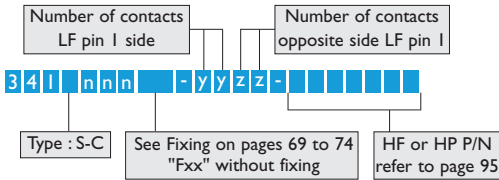
CMM 340

Male mixed-layout

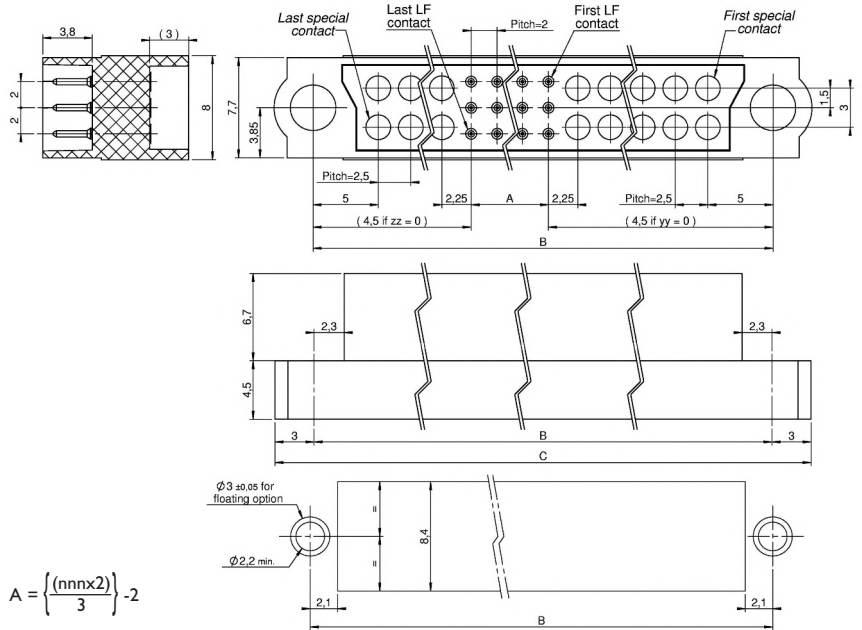
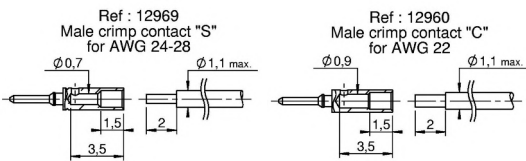
CRIMP



Part numbering :



Type	Gauge
S	24-28
C	22



$$A = \left\{ \frac{(nnn \times 2)}{3} \right\} - 2$$

if yy and zz ≠ 0 :

$$B = \left\{ \left(\frac{(yy) + (zz)}{2} \right) - 2 \right\} \times 2.5 + 14.5 + A$$

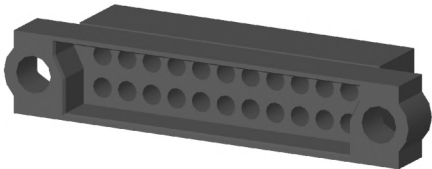
if yy or zz = 0 :

$$B = \left\{ \left(\frac{(yy) \text{ or } (zz)}{2} \right) - 1 \right\} \times 2.5 + 11.75 + A$$

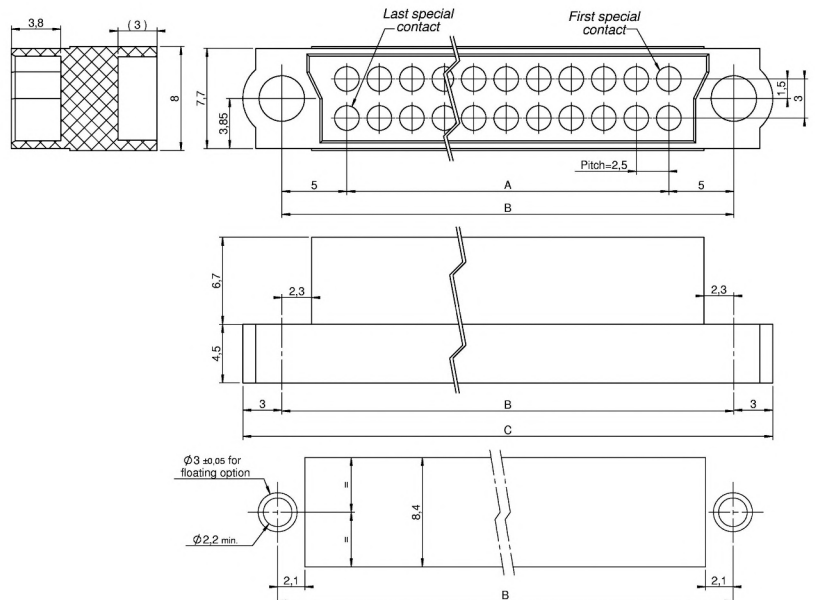
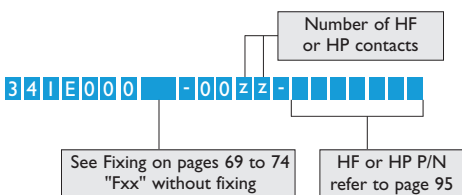
$$B \text{ max.} = 87$$

$$C = B + 6$$

CRIMP FOR HP/HF CONTACTS ONLY



Part numbering :



$$A = \left(\frac{(zz \times 2.5)}{2} \right) - 2.5$$

$$B = A + 10$$

$$C = B + 6$$

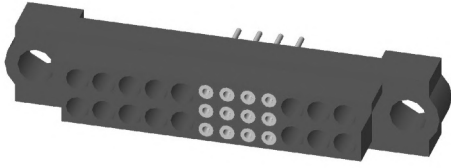
Special contacts min. : 04
max. : 64

Refer to dimension table on cover page

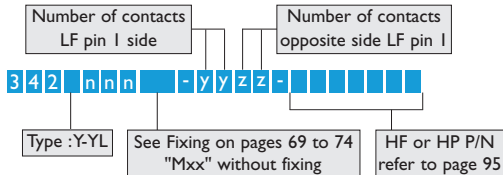
CMM 340

Female mixed-layout

STRAIGHT PCB



Part numbering :

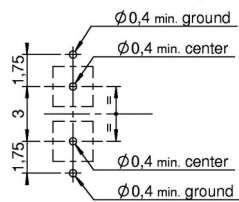


nnn = number of LF contacts

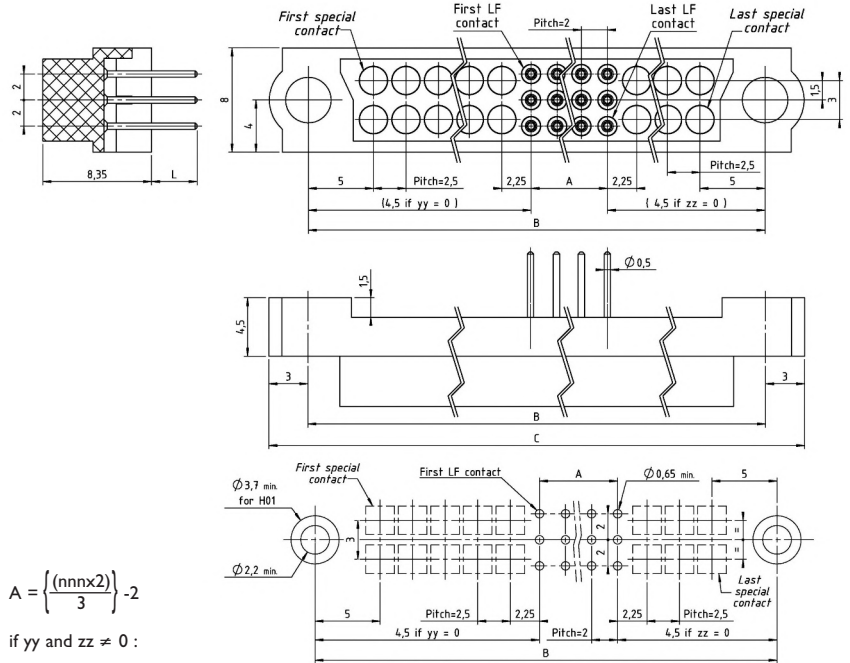
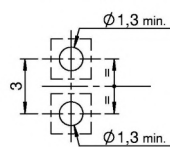
Type	L
Y	3
YL	4,5

Pattern for special contact :

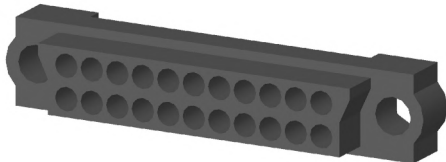
HF 22-2300-xx PCB Lay-out



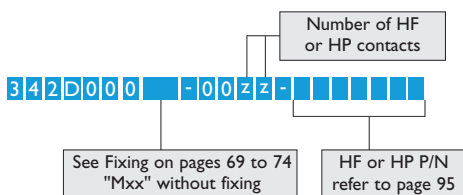
HP 22-4300-xx PCB Lay-out



STRAIGHT PCB FOR HP/HF CONTACTS ONLY

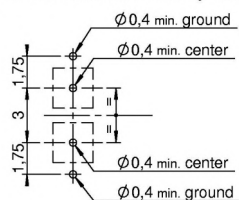


Part numbering :

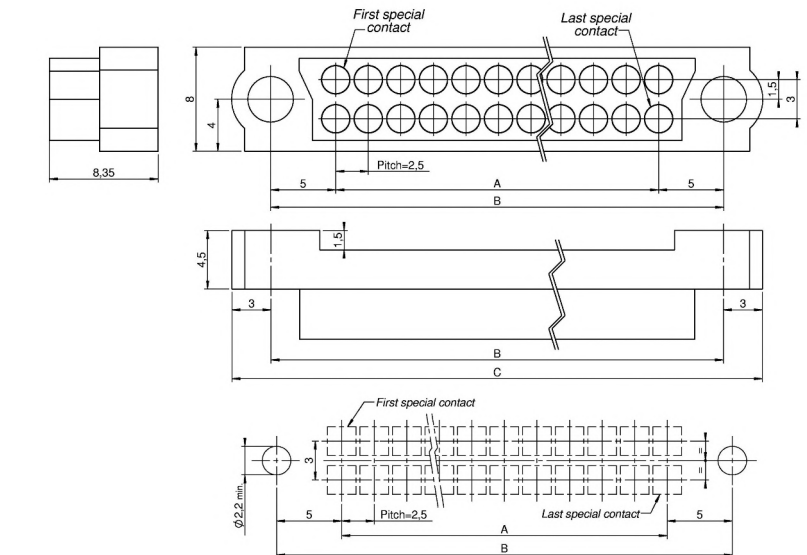
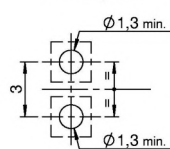


Pattern for special contact :

HF 22-2300-xx PCB Lay-out



HP 22-4300-xx PCB Lay-out



Special contacts min.: 04
max.: 64

$$A = \left(\frac{zz \times 2.5}{2} \right) - 2.5$$

$$B = A + 10$$

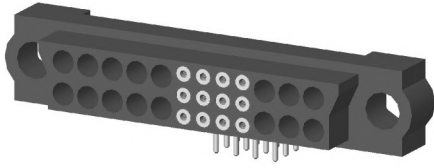
$$C = B + 6$$

Refer to dimension table on cover page

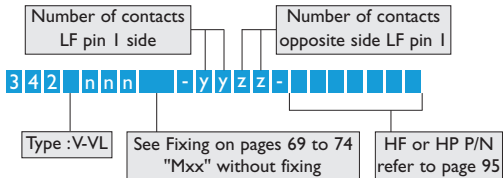
CMM 340

Female mixed-layout

90° PCB



Part numbering :

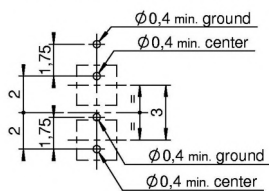


nnn = number of LF contacts

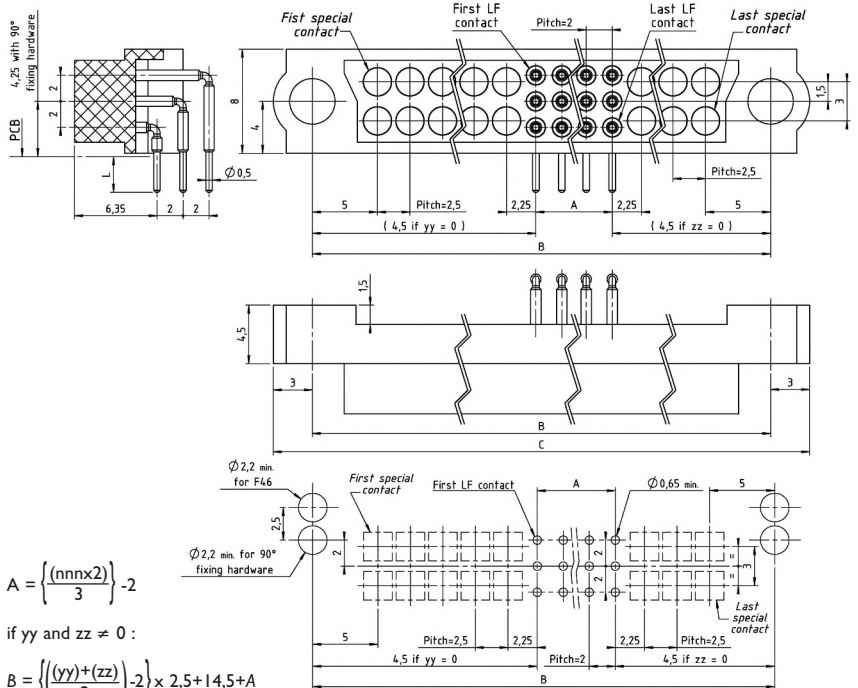
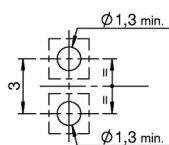
Type	L
V	3
VL	4,5

Pattern for special contact :

HF 22-2400-xx PCB Lay-out



HP 22-4400-xx PCB Lay-out



$$A = \left\{ \frac{(nnn \times 2)}{3} \right\} - 2$$

if yy and zz $\neq$ 0 :

$$B = \left\{ \left(\frac{(yy) + (zz)}{2} \right) - 2 \right\} \times 2,5 + 14,5 + A$$

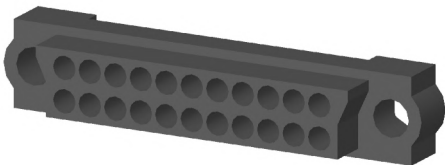
if yy or zz = 0 :

$$B = \left\{ \left(\frac{(yy) \text{ or } (zz)}{2} \right) - 1 \right\} \times 2,5 + 11,75 + A$$

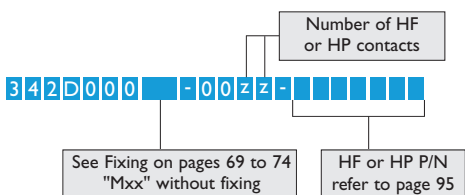
B max. = 87

C = B + 6

90° PCB FOR HP/HF CONTACTS ONLY

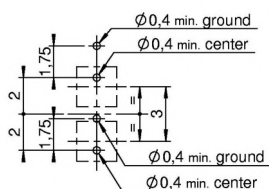


Part numbering :

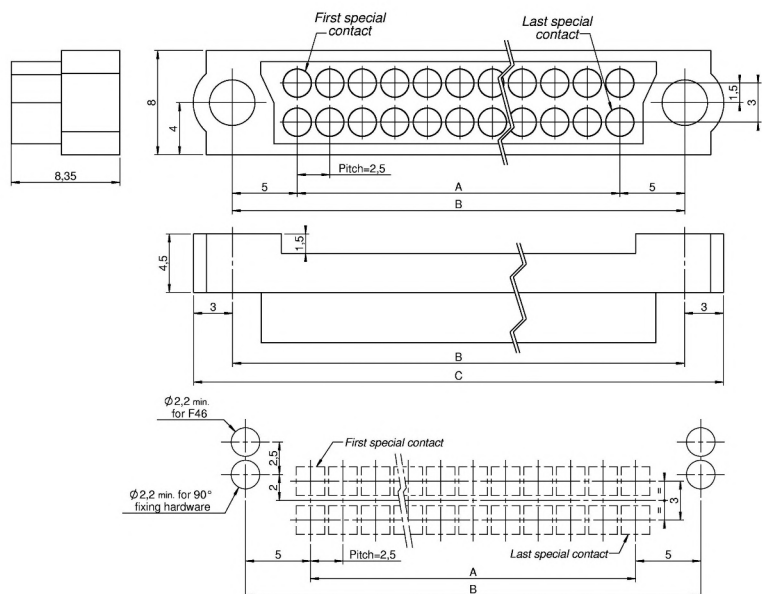
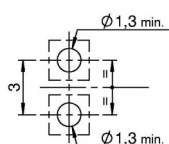


Pattern for special contact :

HF 22-2400-xx PCB Lay-out



HP 22-4400-xx PCB Lay-out



$$A = \left(\frac{(zz \times 2,5)}{2} \right) - 2,5$$

B = A + 10

C = B + 6

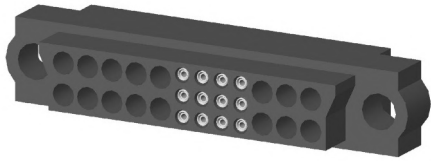
Refer to dimension table on cover page

Special contacts min. : 04
max. : 64

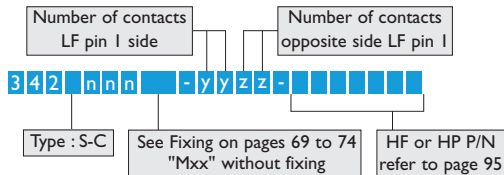
CMM 340

Female mixed-layout

CRIMP

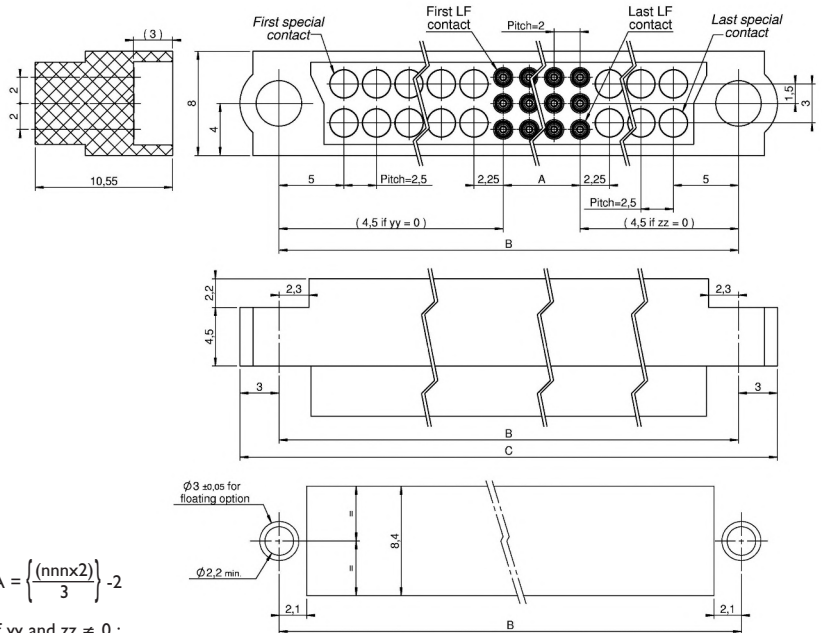
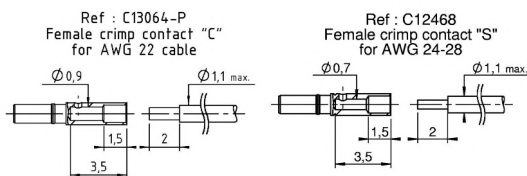


Part numbering :



nnn = number of LF contacts

Type	Gauge
S	24-28
C	22



$$A = \left\{ \frac{nnn \times 2}{3} \right\} - 2$$

if yy and zz $\neq$ 0 :

$$B = \left\{ \left(\frac{yy + zz}{2} \right) - 2 \right\} \times 2,5 + 14,5 + A$$

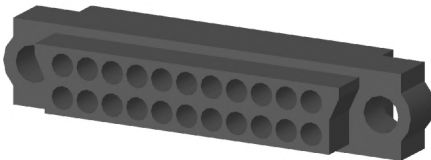
if yy or zz = 0 :

$$B = \left\{ \left(\frac{yy \text{ or } zz}{2} \right) - 1 \right\} \times 2,5 + 11,75 + A$$

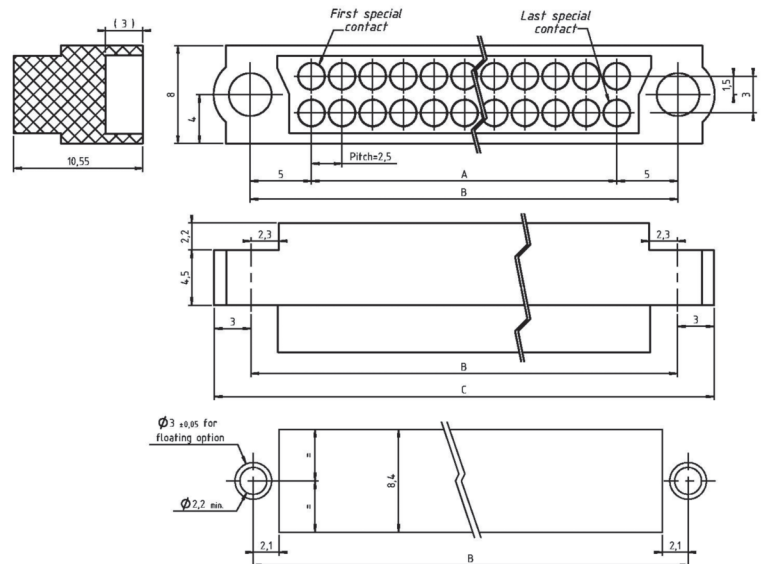
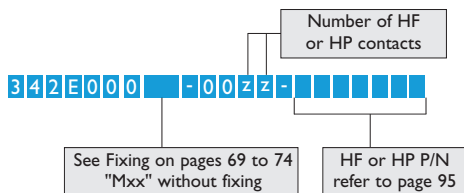
B max. = 87

C = B + 6

CRIMP FOR HP/HF CONTACTS ONLY



Part numbering :



$$A = \left(\frac{zz \times 2,5}{2} \right) - 2,5$$

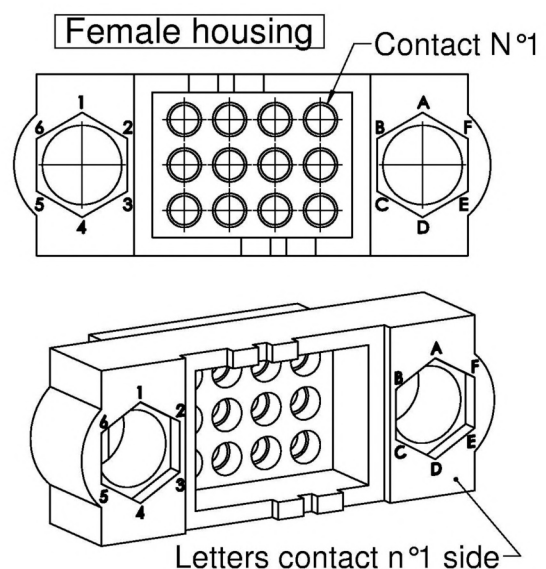
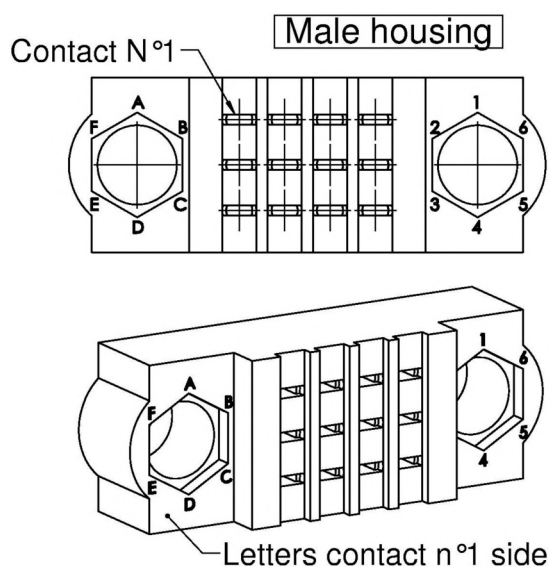
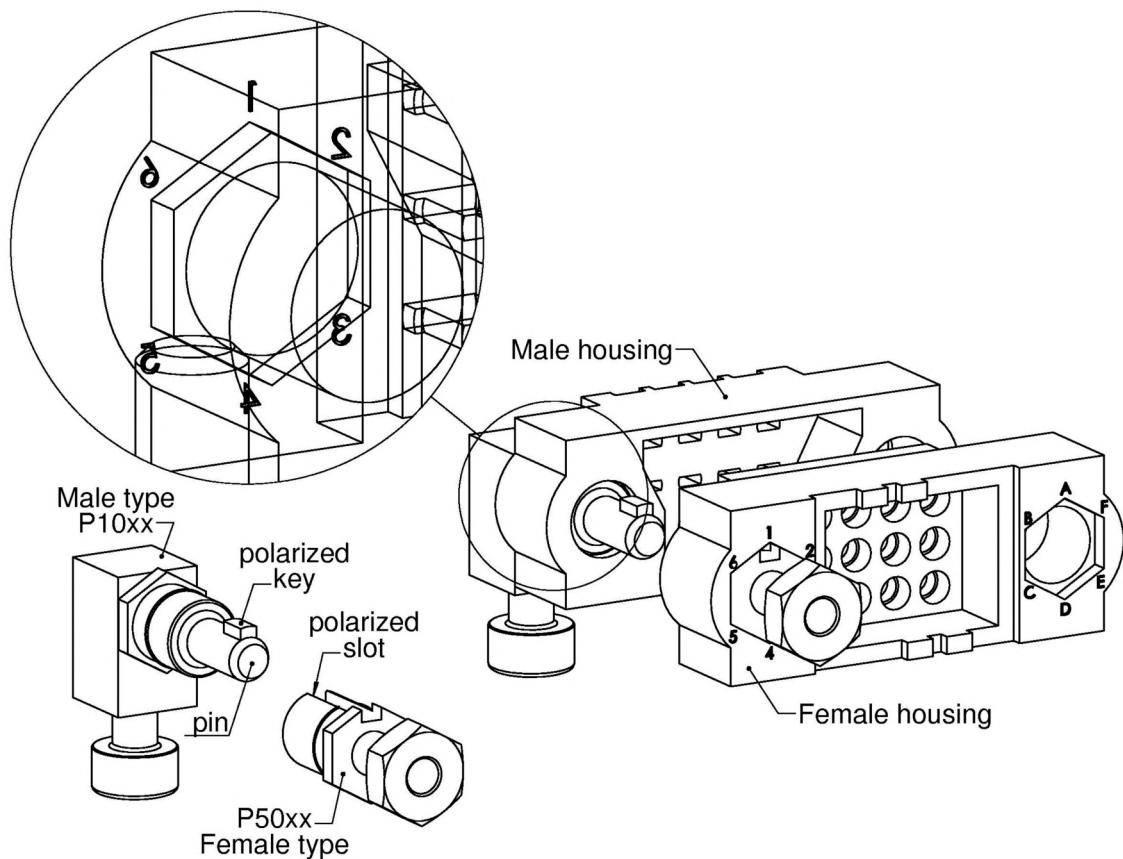
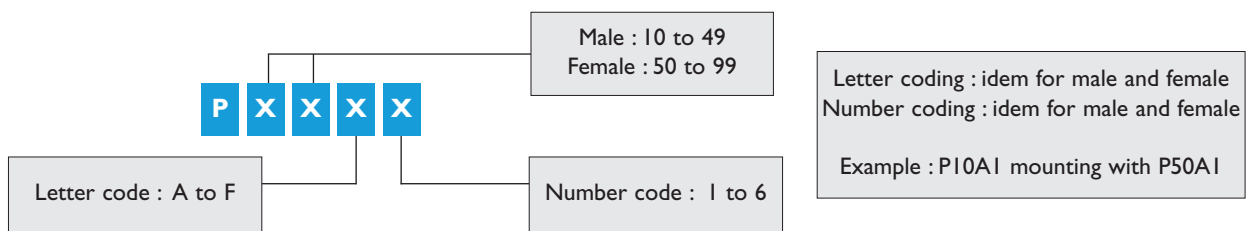
B = A + 10

C = B + 6

Special contacts min. : 04
max. : 64

Refer to dimension table
on cover page

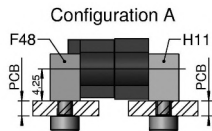
Fixing hardware for CMM SERIES 320/340



Fixing hardware for CMM 320/340

RACK INTERCONNECTION

		MALE CONNECTORS CMM SERIES 320 & 340 RACK																	
FEMALE CONNECTORS SERIES 320 & 340 RACK	Type of contact in connector	PCB Contacts										Contacts on cable							
		Type of PCB mount		Straight										Straight				90°	
		PCB thickness (mm)		0,8 min. 2 max.		1,5 min. 4 max.		0,8 min. 2 max.		1,5 min. 4 max.		4 max.		0,8 min. 2 max.		1,5 min. 4 max.		4 max.	
		Fixing		M38	M38H	M36	M36H	F58	F58H	F59	F59H	F48	H11	M35	M39	F48	H11	M3xx	F40
PCB Contacts	Straight	0,8 min. 2 max.	M35					OK	OK	OK	OK	OK					OK		OK
			M35H					OK	OK	OK	OK	OK					OK		OK
		1,5 min. 4 max.	M39					OK	OK	OK	OK	OK					OK		OK
			M39H					OK	OK	OK	OK	OK					OK		OK
	90°	4 max.	H11					OK	OK	OK	OK	A					A		OK
			F48	OK	OK	OK	OK						A	OK	OK		A	OK	
Contacts on cable	Straight	No fixing on PCB	F40	OK	OK	OK	OK						OK	OK	OK		OK	OK	
		0,8 min. 2 max.	M35					OK	OK	OK	OK	OK					OK		OK
		1,5 min. 4 max.	M39					OK	OK	OK	OK	OK					OK		OK
		4 max.	H11					OK	OK	OK	OK	A					A		OK
	90°		F48	OK	OK	OK	OK					A	OK	OK			A	OK	
		Floating	M3xx					OK	OK	OK	OK	OK					OK		OK
No fixing on PCB			F40	OK	OK	OK	OK						OK	OK	OK		OK	OK	



Recommended Torque : 0,2 N/m

A Card extension

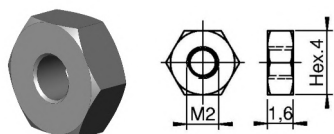
REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
F40	Straight on PCB 		F40 : CMM female : Y-YL-S-C-E (D : straight) CMM male : S-C-E
F48	90° on PCB 4 max. 		F48 : CMM female : V-VL-S-C-E (D : 90°) CMM male : V-VL-R-S-C-E (D : 90°)
F58	Straight on PCB 0,8 min / 2 max 		F58 : CMM male : Y (D : straight)
F58H			F58H : CMM male : Y (D : straight)
F59	Straight on PCB 1,5 min / 4 max 		F59 : CMM male : YL (D : straight)
F59H			F59H : CMM male : YL (D : straight)

Make it a habit! Use easy & automatic configurators for CMM micro-connectors single part and mating-half construction on www.nicomatic.com.

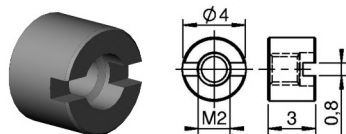
Fixing hardware for CMM 320/340

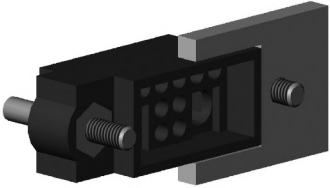
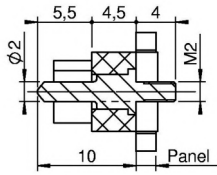
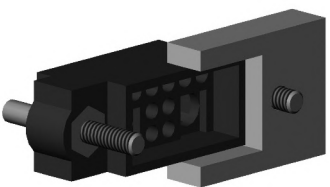
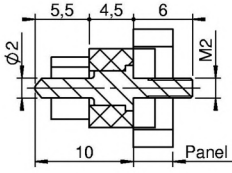
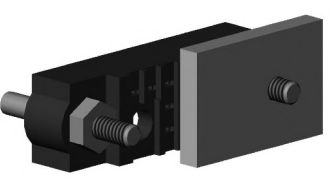
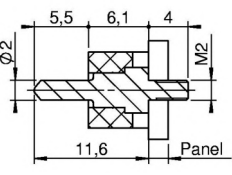
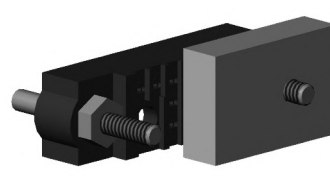
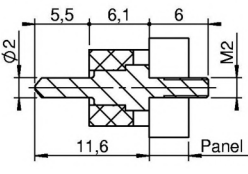
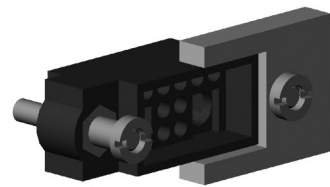
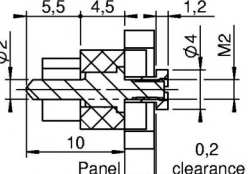
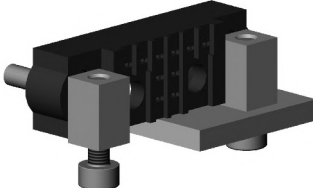
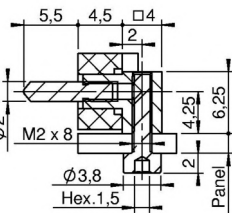
RACK INTERCONNECTION

HEXAGONAL NUT



STANDARD NUT



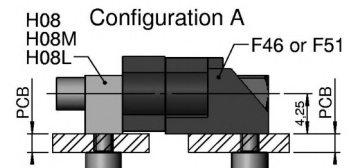
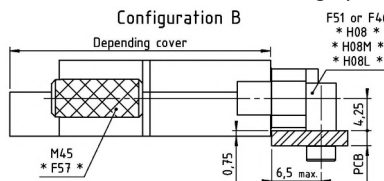
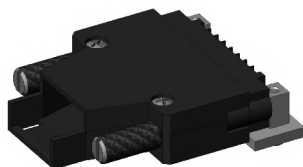
REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
M35 	Straight on PCB 0,8 min / 2 max 		M35 : CMM female : Y-S-C (D-E : straight) CMM male : S-C (E : straight) M35H : CMM female : Y (D : straight)
M35H 			
M39 	Straight on PCB 1,5 min / 4 max 		M39 : CMM female : YL-S-C (D-E : straight) CMM male : S-C (E : straight) M39H : CMM female : YL (D : straight)
M39H 			
M38 	Straight on PCB 0,8 min / 2 max 		M38 : CMM male : Y (D : straight) M38H : CMM male : Y (D : straight)
M38H 			
M36 	Straight on PCB 1,5 min / 4 max 		M36 : CMM male : YL (D : straight) M36H : CMM male : YL (D : straight)
M36H 			
M3xx xx = (PCB thickness + 0,2 mm) x 10 Example : for 3 mm PCB, the reference is M332 (3 + 0,2) x 10 = 32 xx = 32	Straight on PCB with floating option 		M3xx : CMM female : S-C (E : straight) CMM male : S-C (E : straight)
H11	90° on PCB 4 max. 		H11 : CMM female : V-VL-S-C-E (D : 90°) CMM male : V-VL-R-S-C-E (D : 90°)

Fixing hardware for CMM 320/340

LOCKED INTERCONNECTION

MALE CONNECTORS CMM SERIES 320 & 340 WITH LOCKING																																
Type of contact in connector				PCB Contacts													Contacts on cable															
Type of PCB mount		Straight				90°				Card edge with 30-1500-12 HF	No fixing on PCB		Straight		90°				Floating fixing	No fixing on PCB		No fixing on PCB	With cover	With cover								
		0,8 min. 2 max.		1,5 min. 4 max.		4 max.		1 min. 2 max.					2 min. 3 max.		3 min. 4 max.		4 max.			1 min. 2 max.					2 min. 3 max.		3 min. 4 max.					
		PCB thickness (mm)	Fixing	F42	F42H	F44	F44H	F46	F51	H08	H08M	H08L	F50	H01	H01C	F52	F45	F46	F51	H08	H08M	H08L	F4xx	H01	H01C	F41	F57	M45				
PCB Contacts		Straight	0,8 min. 2 max.	F52						OK	OK	OK		OK	OK						OK	OK	OK		OK	OK			OK			
				F52H							OK	OK	OK		OK	OK						OK	OK	OK		OK	OK			OK		
			1,5 min. 4 max.	F45							OK	OK	OK		OK	OK						OK	OK	OK		OK	OK			OK		
				F45H							OK	OK	OK		OK	OK							OK	OK	OK		OK	OK			OK	
		90°	4 max.	F46								A	A	A		OK	OK					A	A	A		OK	OK			B		
				F51								A	A	A		OK	OK					A	A	A		OK	OK			B		
			1 min. 2 max.	H08	OK	OK	OK	OK	A	A								OK	OK	A	A				OK			OK	B			
				H08M	OK	OK	OK	OK	A	A								OK	OK	A	A				OK			OK	B			
			3 min. 4 max.	H08L	OK	OK	OK	OK	A	A								OK	OK	A	A				OK			OK	B			
			No fixing on PCB	H01	OK	OK	OK	OK	OK	OK					OK			OK	OK	OK	OK				OK			OK	OK			
				H01C	OK	OK	OK	OK	OK	OK					OK			OK	OK	OK	OK				OK			OK	OK			
			No fixing on PCB	F41								OK	OK	OK		OK	OK					OK	OK	OK		OK	OK			OK		
		Contacts on cable		Straight	0,8 min. 2 max.	F52						OK	OK	OK		OK	OK					OK	OK	OK		OK	OK			OK		
						F45								OK	OK	OK		OK	OK					OK	OK	OK		OK	OK			OK
					4 max.	F46								A	A	A		OK	OK					A	A	A		OK	OK			B
						F51								A	A	A		OK	OK					A	A	A		OK	OK			B
90°	1 min. 2 max.			H08	OK	OK	OK	OK	A	A								OK	OK	A	A				OK			OK	B			
				H08M	OK	OK	OK	OK	A	A								OK	OK	A	A				OK			OK	B			
	3 min. 4 max.			H08L	OK	OK	OK	OK	A	A								OK	OK	A	A				OK			OK	B			
	Floating fixing			F4xx								OK	OK	OK		OK	OK					OK	OK	OK		OK	OK			OK		
	No fixing on PCB			H01	OK	OK	OK	OK	OK	OK					OK	OK	OK	OK	OK	OK	OK				OK		OK	OK				
				H01C	OK	OK	OK	OK	OK	OK					OK	OK	OK	OK	OK	OK	OK				OK		OK	OK				
No fixing on PCB	F41											OK	OK	OK								OK	OK	OK		OK				OK		
	With cover			F57								B	B	B		OK	OK					B	B	B		OK				OK		
	With cover			M45	OK	OK	OK	OK	B	B					OK			OK	OK	B	B				OK			OK	OK			

Make it a habit! Use easy & automatic configurators for CMM micro-connectors single part and mating-half construction on www.nicomatic.com.



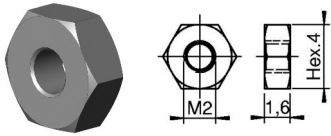
CMM 320/340 MALE & FEMALE THREADED FIXING HARDWARE

REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
H01 H01C	Straight on PCB	3,5 4,5 3 M2 Hex. 2 Ø3,5 8 Panel	H01/H01C : CMM female : Y-YL-S-C-E (D : straight) CMM male : Y-YL-S-C-E (D : straight)
H08 PCB : 1 min. / 2 max. H08M PCB : 2 min. / 3 max. H08L PCB : 3 min. / 4 max.	90° on PCB	3,5 6,5 3 M2 4,5 3 Hex. 2 Ø3,5 2 Panel M2 x L Ø3,8 Hex. 1,5	H08/H08M/H08L : CMM female : V-VL-S-C-E (D : 90°) CMM male : V-VL-R-S-C-E (D : 90°)

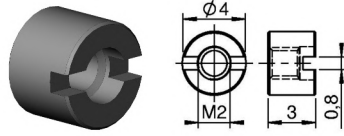
Fixing hardware for CMM 320/340

LOCKED INTERCONNECTION

HEXAGONAL NUT



STANDARD NUT

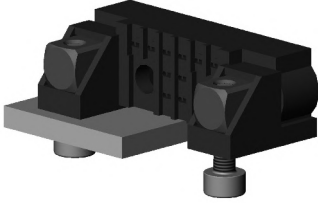
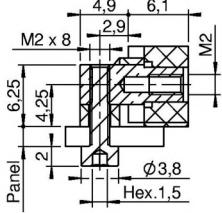
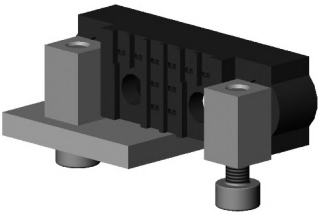
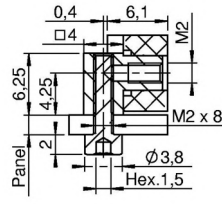
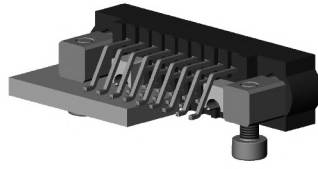
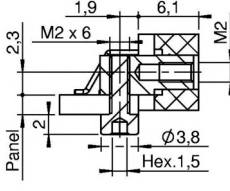
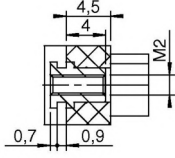
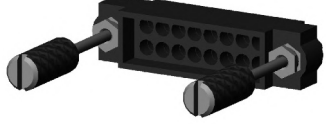
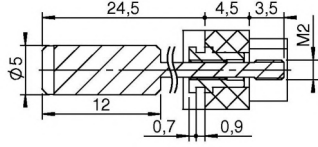


Recommended Torque : 0,2 N/m

REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
F4XX xx = (PCB thickness + 0,2 mm) x 10 Example : for 3 mm PCB, the reference is F432 (3 + 0,2) x 10 = 32 xx = 32	Straight on PCB floating option 		F4XX : CMM female : S-C (E : straight) CMM male : S-C (E : straight)
F4I	Straight on PCB 		F4I : CMM female : Y-YL-S-C-E (D : straight) CMM male : S-C-E
F52 	Straight on PCB 0,8 min / 2 max 		F52 : CMM female : Y-S-C (D-E : straight) CMM male : S-C (E : straight) F52H : CMM female : Y (D : straight)
F52H 			
F45 	Straight on PCB 1,5 min / 4 max 		F45 : CMM female : YL-S-C (D-E : straight) CMM male : S-C (E : straight) F45H : CMM female : YL (D : straight)
F45H 			
F42 	Straight on PCB 0,8 min / 2 max 		F42 : CMM male : Y (D : straight) F42H : CMM male : Y (D : straight)
F42H 			
F44 	Straight on PCB 1,5 min / 4 max 		F44 : CMM male : YL (D : straight) F44H : CMM male : YL (D : straight)
F44H 			

Fixing for CMM 320/340

CMM 320/340 MALE & FEMALE TAPPED FIXING HARDWARE

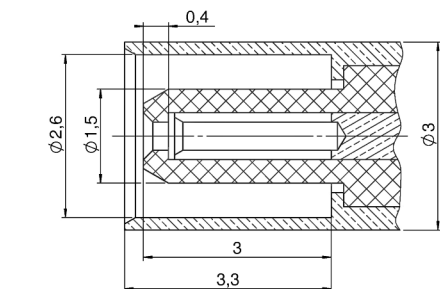
REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
F46	90° on PCB 4 max. 		F46 : CMM female : V-VL-S-C-E (D : 90°) CMM male : V-VL-R-S-C-E (D : 90°)
F51	90° on PCB 4 max. 		F51 : CMM female : V-VL-S-C-E (D : 90°) CMM male : V-VL-R-S-C-E (D : 90°)
F50	90° on PCB 4 max. 		F50 : Card edge LF contact or mixed
F57	Cover option only 		Male and female S-C (E : straight) 
M45	Cover option only 		Male and female S-C (E : straight) 

HF : High Frequency contacts series 30

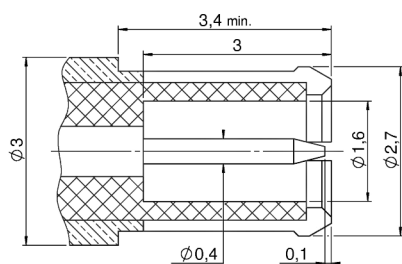
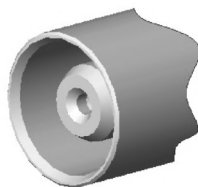
HP : High Power contacts series 30

FOR CMM 220 AND 320

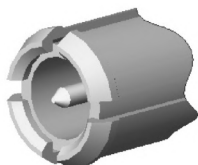
INSERTION



HF female contact insertion



HF male contact insertion



PART NUMBERING FOR PCB HF & HP SPECIAL CONTACTS

These two digits are linked to the connector. Do not use them inside a CMM part number when loaded. All dash signs also disappear

Contact type :
3 = straight
4 = right angle
5 = SMT 90°
6 = SMT straight

Termination length
"CMM" = 3mm
"45" = 4.5mm
"12" = 3mm (Female CMM320)
"14" = 4.5mm (Female CMM320)
"..."

Coaxmatic 30™
1 = male coax
2 = female coax
3 = high power male
4 = high power female

30-00-

PART NUMBERING FOR HF & HP SPECIAL CONTACTS ON-CABLE

These two digits are linked to the connector. Do not use them inside a CMM part number when loaded. All dash signs also disappear

For HF contacts only Inner contact
Z = solder
S = crimp

For HF contacts only Shield
Z = solder
S = crimp

Contact type :
3 = straight
4 = right angle

Use these 2 digits only with 1.2mm dia. cables mounted on a HF straight contact
Crimp shield type: 01 = refer to page 81
02 = refer to page 81

Special contacts :
1 = male HF
2 = female HF
3 = male HP
4 = female HP

30-00-00-00-

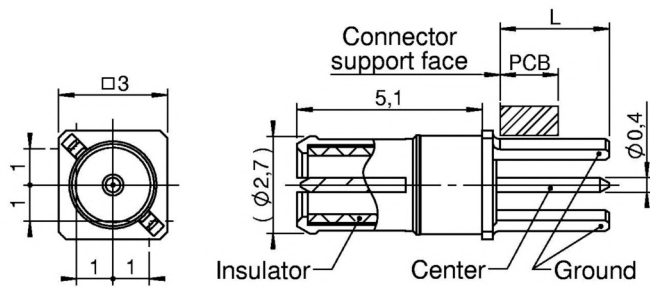
Double shield
DS

Use these 2 digits only with 75 Ohm cables

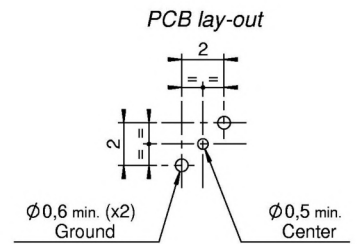
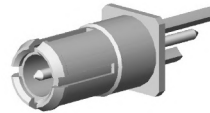
Contact termination:
10 = for HP 10A
15 = for HP 15A
20 = for HP 20A
12 = for HF cable 1.2mm
20 = for HF cable 2mm
24 = for HF cable 2.4mm
26 = for HF cable 2.6mm
47 = for HF cable type UT47
85 = for HF cable type UT85
"..."

HF : High Frequency contact series 30

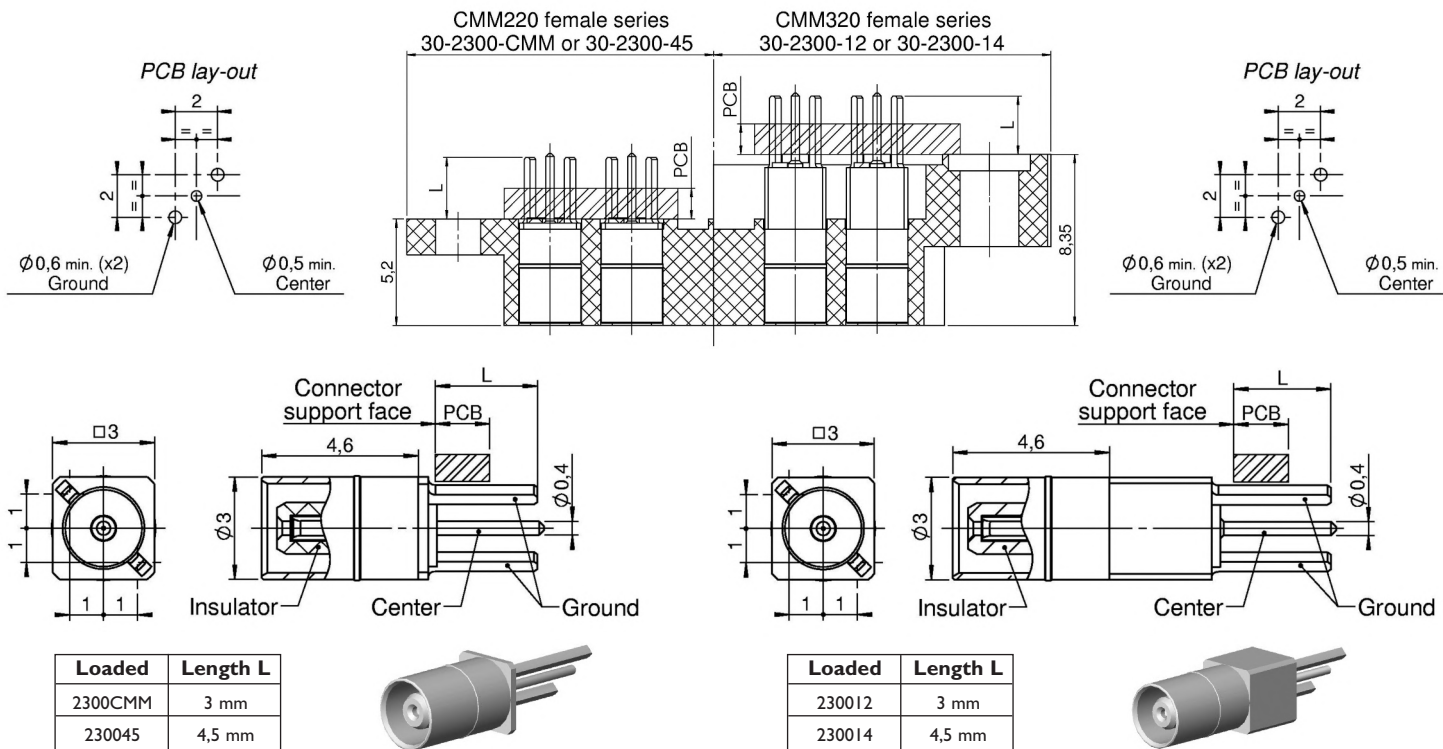
MALE STRAIGHT ON PCB P/N 30-1300-xx



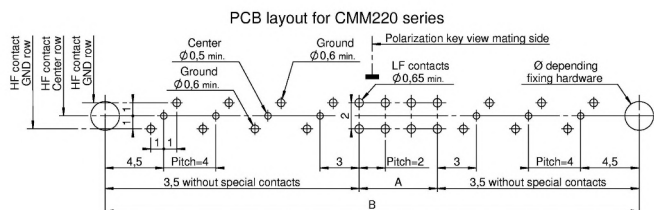
Loaded	Length L
I300CMM	3 mm
I30045	4,5 mm



FEMALE STRAIGHT ON PCB P/N 30-2300-xx



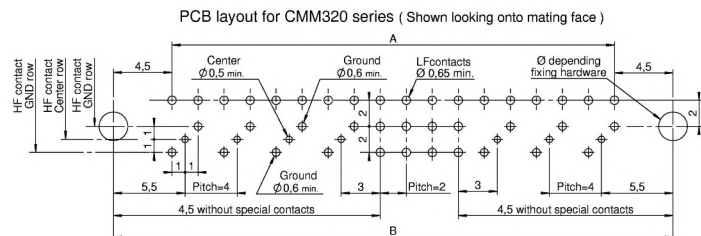
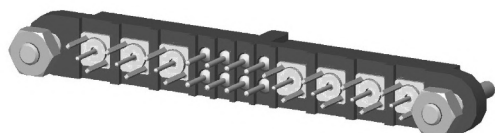
PCB LAYOUT 30-1300-xx & 30-2300-xx



$$A = nn - 2$$

$$B = \{(yy + zz) \times 4\} + A + 7$$

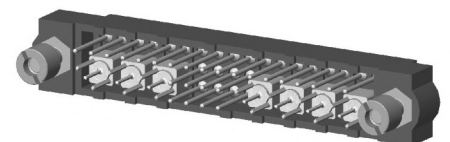
$$B \text{ max.} = 65 \text{ mm}$$



$$A = \left[\frac{\{(yy + zz) \times 4 + nn\} \times 2}{3} \right] - 2$$

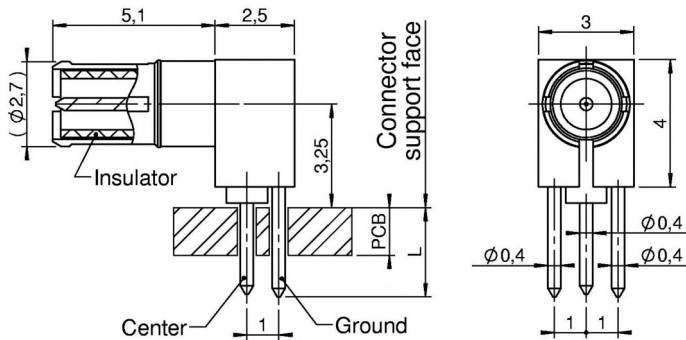
$$B = A + 9$$

$$B \text{ max.} = 87$$



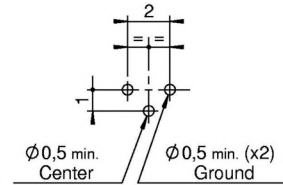
HF : High Frequency contact series 30

MALE 90° PCB P/N 30-1400-xx

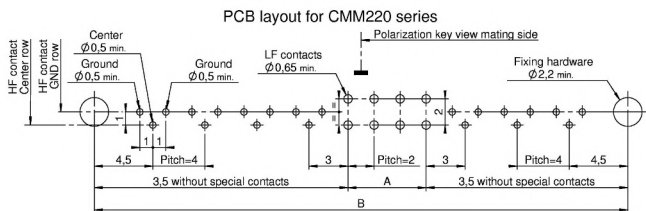


Loaded	Length L
I400CMM	3 mm
I40045	4,5 mm

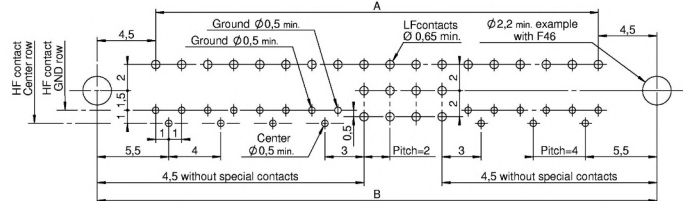
PCB lay-out



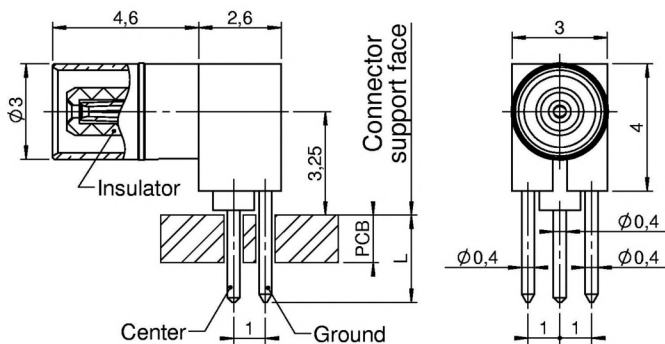
PCB LAYOUT 30-1400-xx



PCB layout for CMM320 series (Shown looking onto mating face)

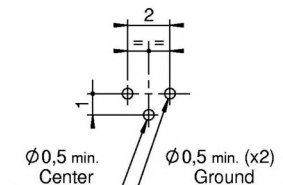


FEMALE 90° PCB P/N 30-2400-xx

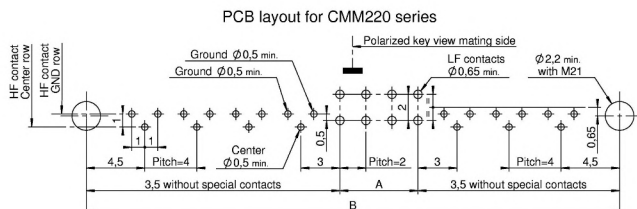


Loaded	Length L
2400CMM	3 mm
240045	4,5 mm

PCB lay-out



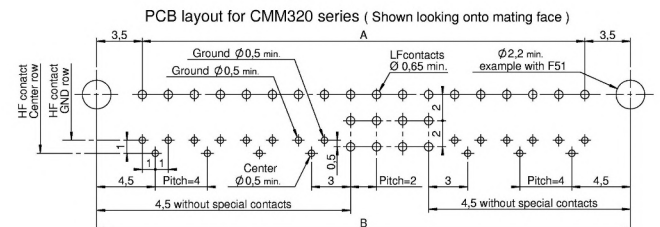
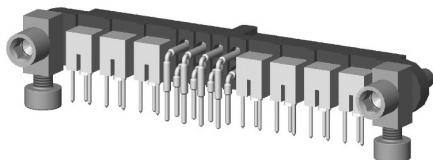
PCB LAYOUT 30-2400-xx



$$A = nn - 2$$

$$B = \{(yy + zz) \times 4\} + A + 7$$

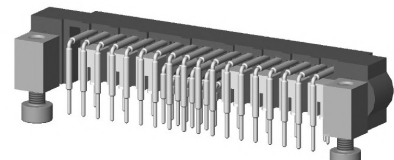
$$B \text{ max.} = 65 \text{ mm}$$



$$A = \left[\frac{\{(yy + zz) \times 4 + nn\} \times 2}{3} \right] - 2$$

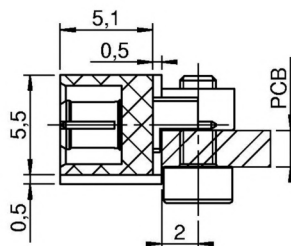
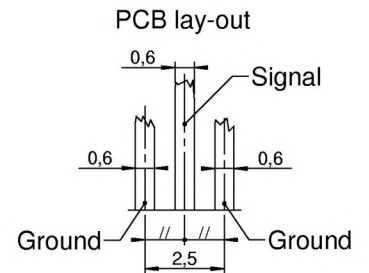
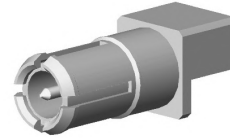
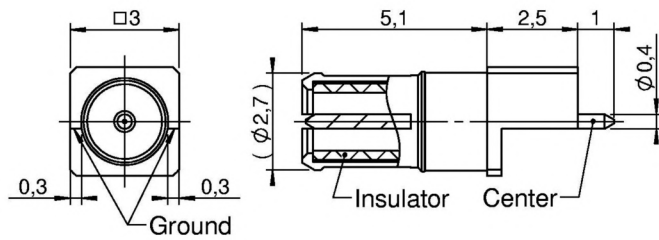
$$B = A + 9$$

$$B \text{ max.} = 87$$

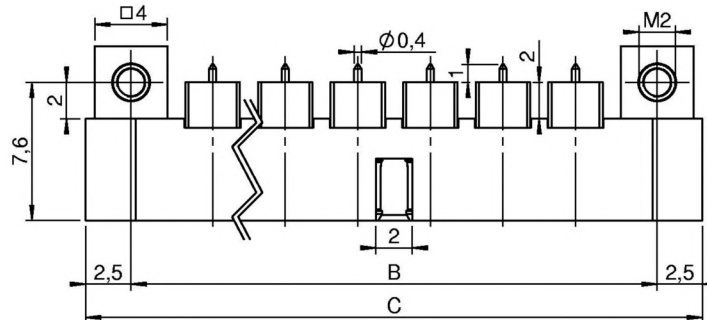
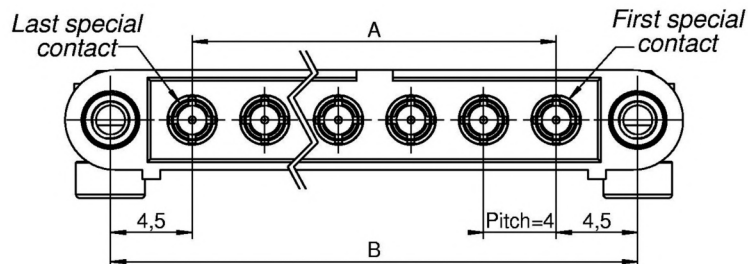
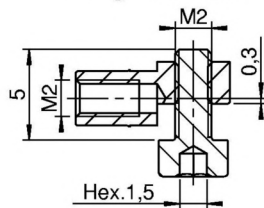


HF : High Frequency contact series 30

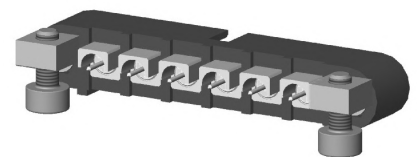
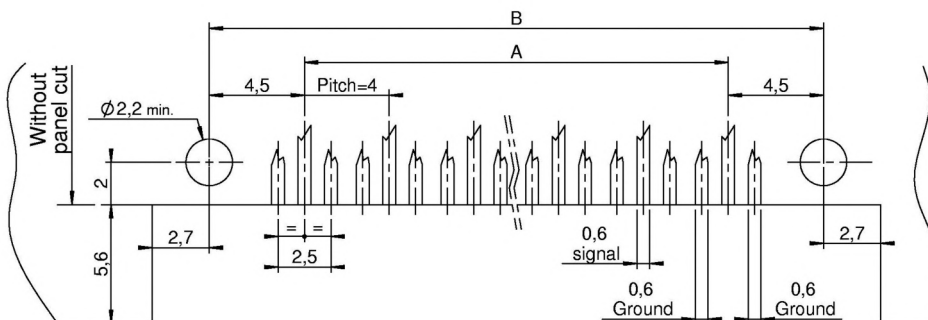
MALE 90° SMT FOR CMM 220 SERIES (WITHOUT CONTACTS) P/N 30-1500-CMM



Monting with F27
fixing hardware



PCB LAYOUT 30-1500-CMM



$$\begin{aligned} A &= (nn \times 4) - 4 \\ B &= A + 9 \\ C &= B + 5 \end{aligned}$$

PART NUMBERING

221D00 F27 - 000zz-1500CMM

Number of contacts

MALE 90° SMT FOR CMM 220 SERIES P/N 30-1500-12

MALE 90° SMT FOR CMM 320 SERIES P/N 30-1500-12

PCB LAYOUT 30-1500-CMM

[illegible]

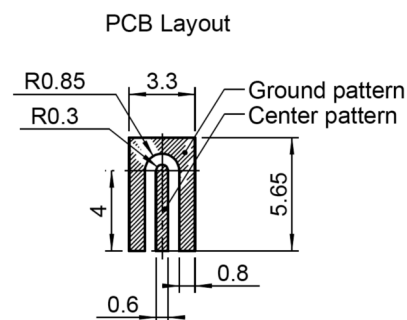
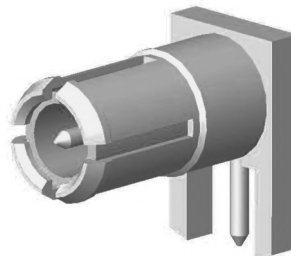
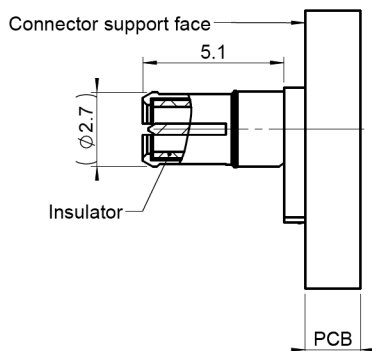
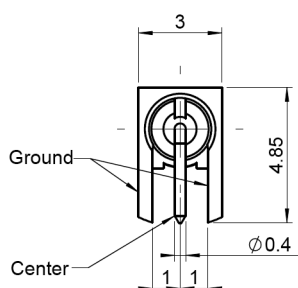
PART NUMBERING

Diagram illustrating the structure of the LF pin code:

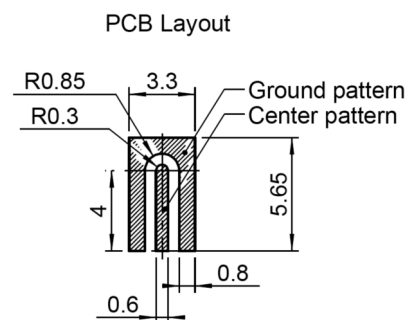
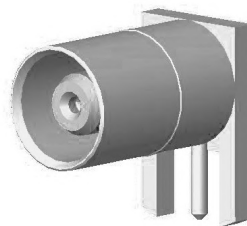
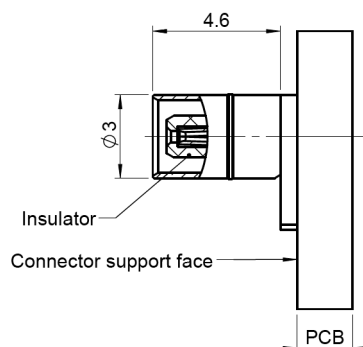
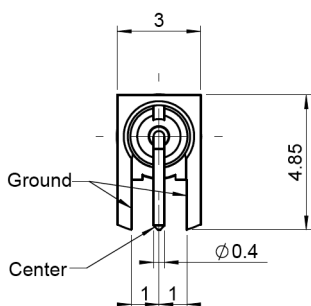
- Number of contacts LF pin 1 side (3, 2, 1)
- Number of contacts opposite side LF pin 1 (1, 5, 0, 0)
- Number of LF contacts (3, 2, 1, BR)

HF : High Frequency contact series 30

MALE STRAIGHT SMT FOR CMM 220 SERIES P/N 30-1600

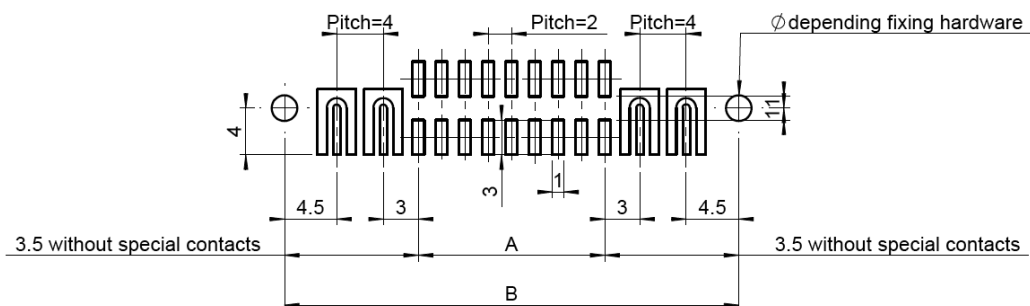


FEMALE STRAIGHT SMT FOR CMM 220 SERIES P/N 30-2600



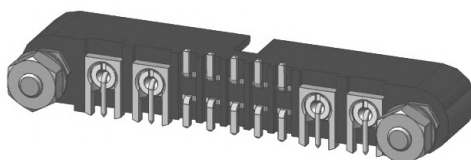
PCB LAYOUT 30-1600 & 30-2600

Recommended PCB layout:

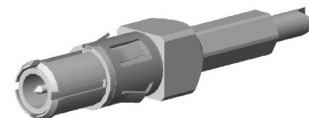


$$A = nn - 2$$

$$B = ((yy + zz) \times 4) + A + 7$$

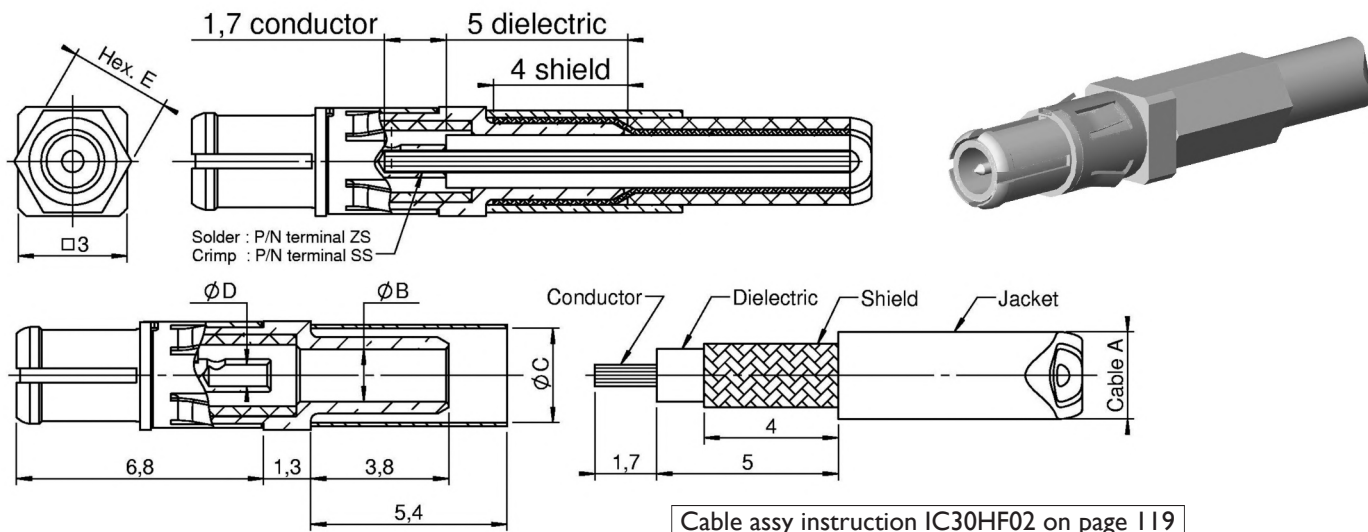


MALE STRAIGHT CRIMP ON CABLES Ø 1.2 P/N 30-1312-ZS

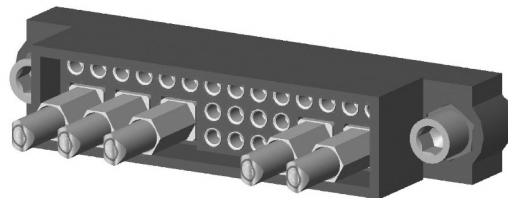


HF : High Frequency contact series 30

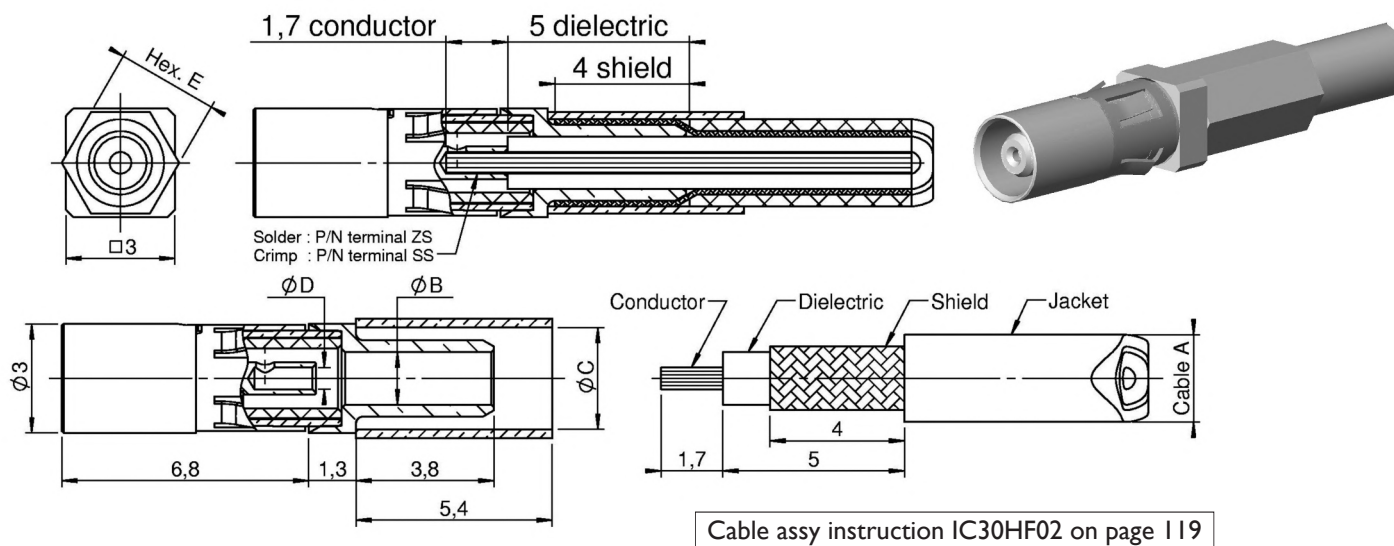
MALE STRAIGHT CRIMP ON CABLE P/N 30-13xx-SS & 30-13xx-ZS



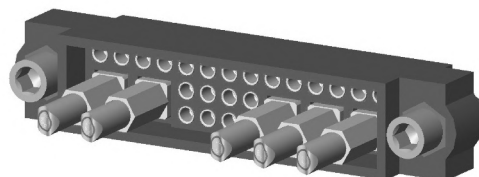
Loaded	Unloaded	Cable A	ØB	ØC	ØD	Hex. E
I320SS	30-1320-SS	Ø 2,0	1 mm	2,2 mm	0,5 mm	2,4 on flat
I324SS	30-1324-SS	Ø 2,4	1,5 mm	2,8 mm	0,6 mm	2,8 on flat
I326SS	30-1326-SS	Ø 2,7	1,7 mm	2,8 mm	0,6 mm	2,8 on flat



FEMALE STRAIGHT CRIMP ON CABLE P/N 30-23xx-SS & 30-23xx-ZS

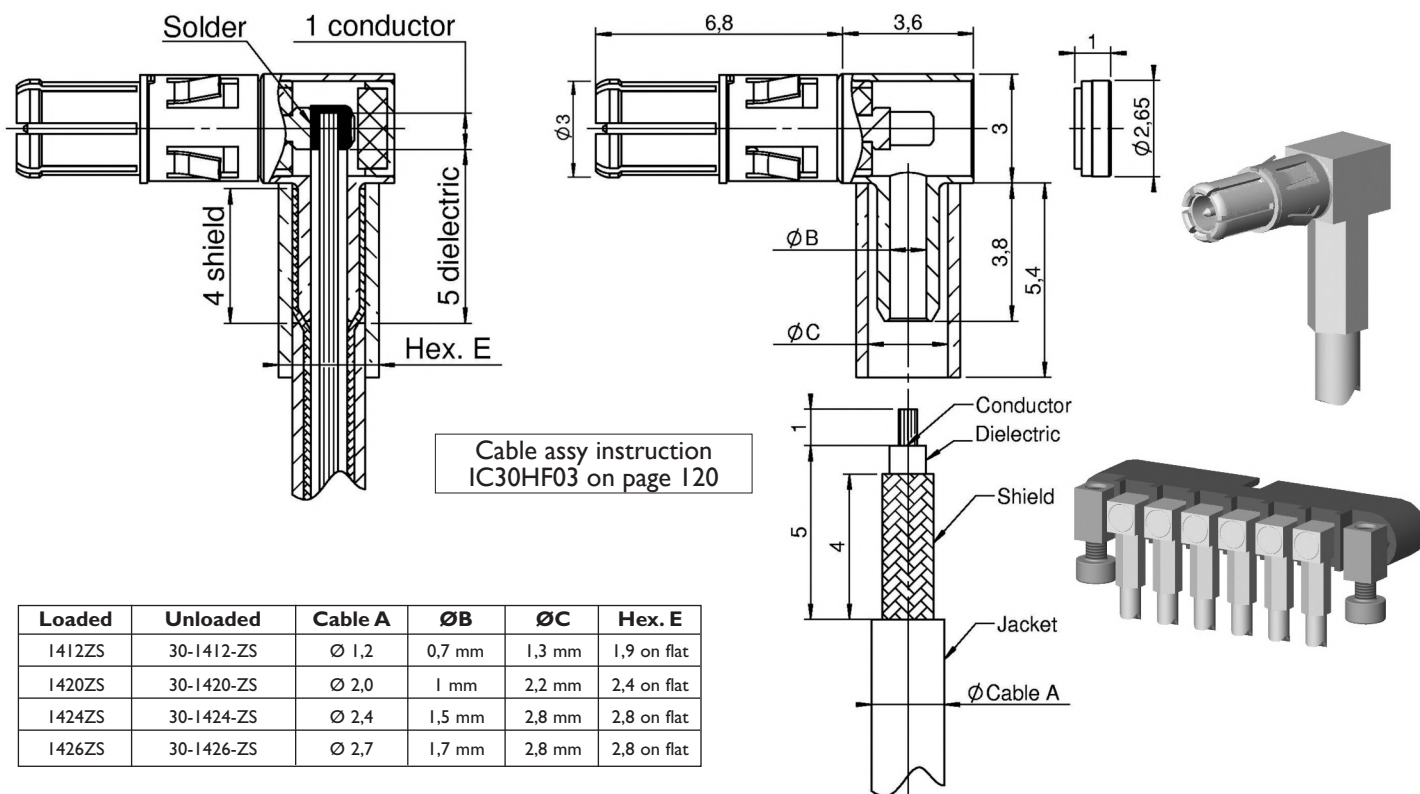


Loaded	Unloaded	Cable A	ØB	ØC	ØD	Hex. E
2320SS	30-2320-SS	Ø 2,0	1 mm	2,2 mm	0,5 mm	2,4 on flat
2324SS	30-2324-SS	Ø 2,4	1,5 mm	2,8 mm	0,6 mm	2,8 on flat
2326SS	30-2326-SS	Ø 2,7	1,7 mm	2,8 mm	0,6 mm	2,8 on flat

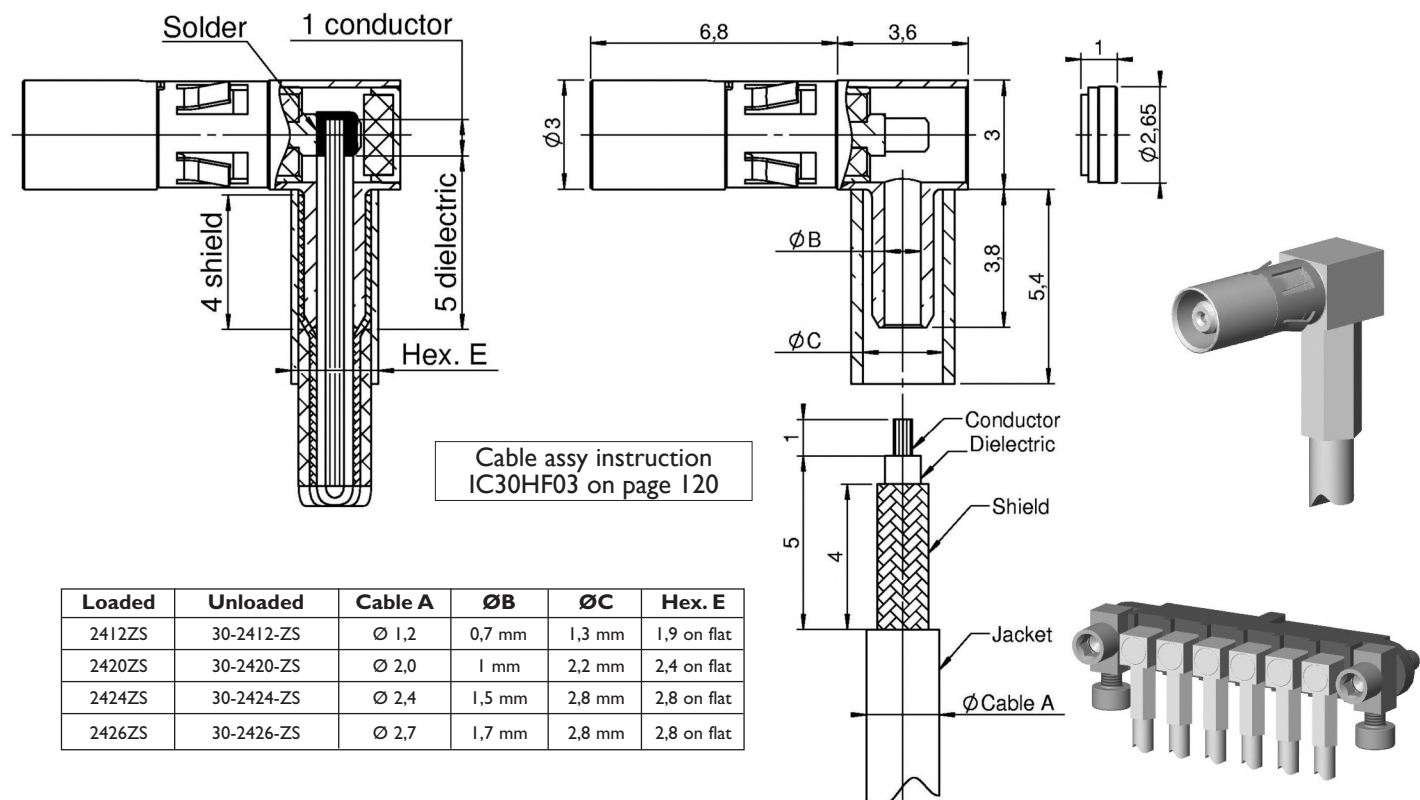


HF : High Frequency contact series 30

MALE 90° CRIMP ON CABLE P/N 30-14xx-ZS

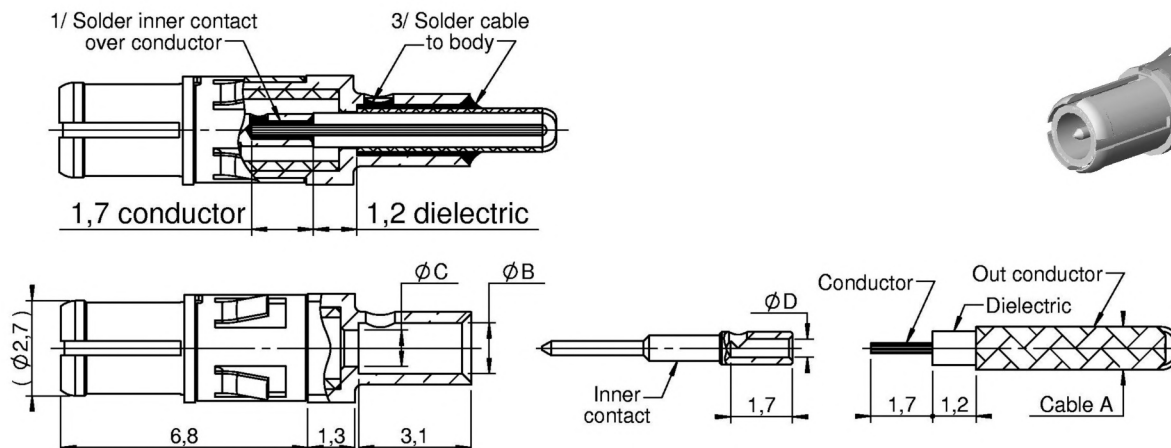


FEMALE 90° CRIMP ON CABLE P/N 30-24xx-ZS



HF : High Frequency contact series 30

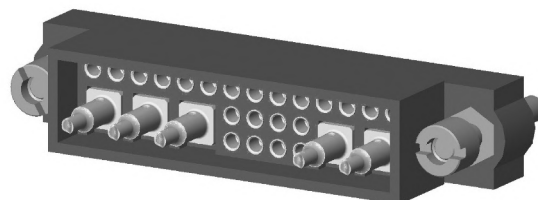
MALE STRAIGHT ON CABLE SEMI-RIGID P/N 30-13xx-ZZ



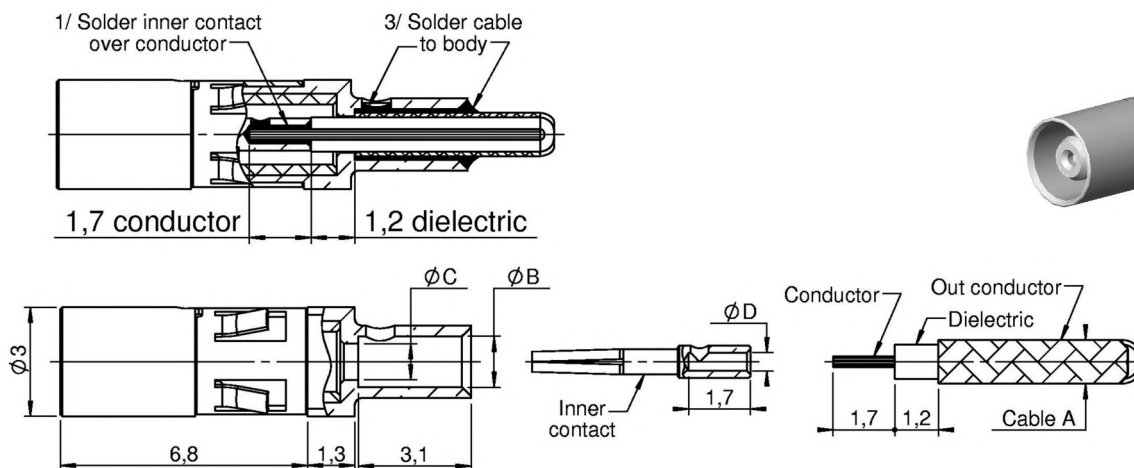
MONTING PROCESS :

- 1/ Solder inner contact over conductor.
- 2/ Push cable with inner contact in body.
- 3/ Solder cable to body. (Tooling reference C14777)

Loaded	Unloaded	Cable A	ØB	ØC	ØD
I347ZZ	30-I347-ZZ	UT 47	1,4 mm	1 mm	0,5 mm
I385ZZ	30-I385-ZZ	UT 85	2,3 mm	1,7 mm	0,6 mm



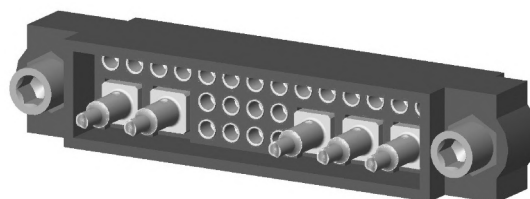
FEMALE STRAIGHT ON CABLE SEMI-RIGID P/N 30-23xx-ZZ



MONTING PROCESS :

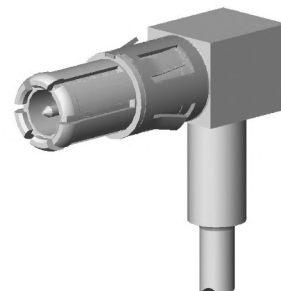
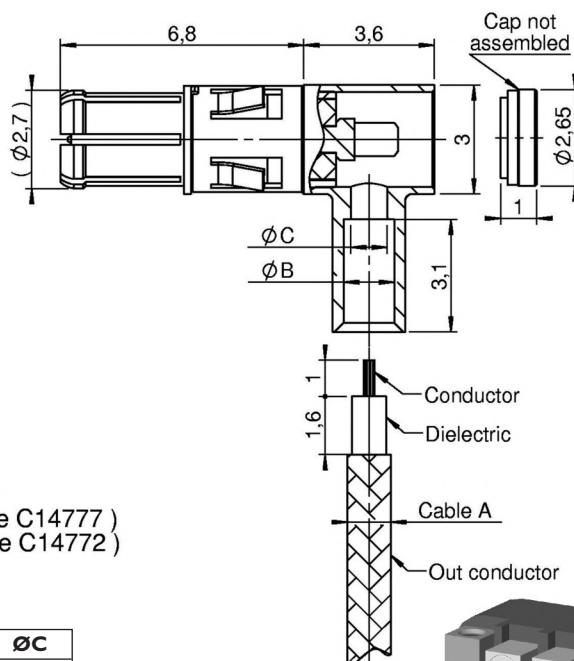
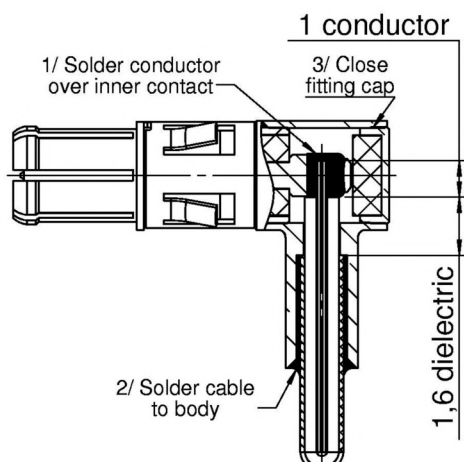
- 1/ Solder inner contact over conductor.
- 2/ Push cable with inner contact in body.
- 3/ Solder cable to body. (Tooling reference C14777)

Loaded	Unloaded	Cable A	ØB	ØC	ØD
2347ZZ	30-2347-ZZ	UT 47	1,4 mm	1 mm	0,5 mm
2385ZZ	30-2385-ZZ	UT 85	2,3 mm	1,7 mm	0,6 mm



HF : High Frequency contact series 30

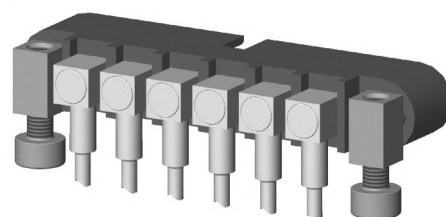
MALE 90° ON CABLE SEMI-RIGID P/N 30-14xx-ZZ



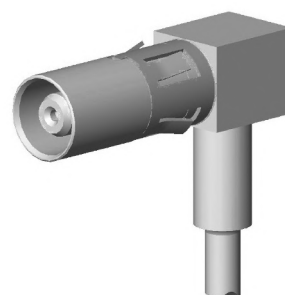
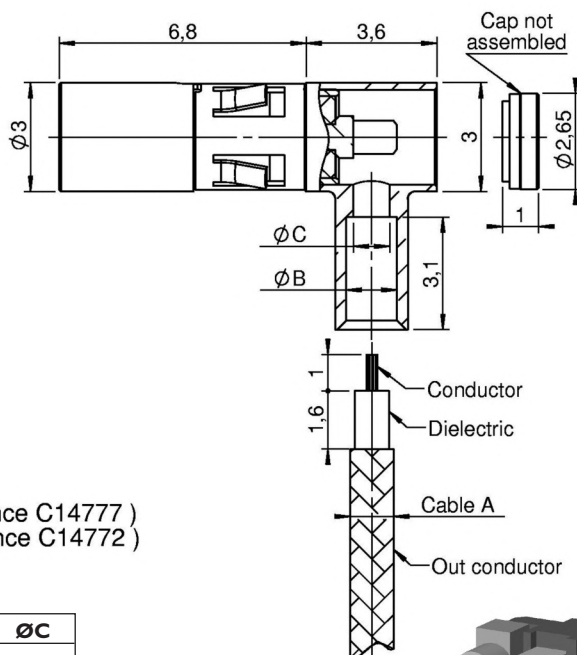
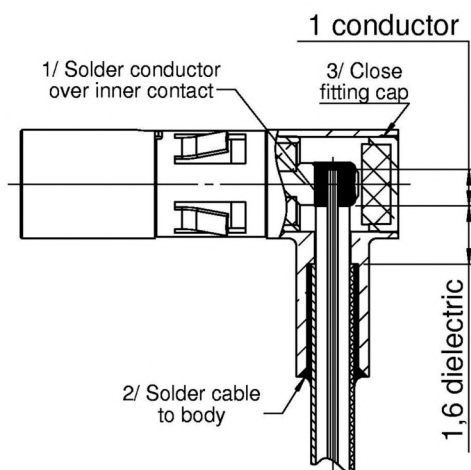
MONTING PROCESS :

- 1/ Solder conductor over inner contact.
- 2/ Solder cable to body. (Tooling reference C14777)
- 3/ Assembly the cap to body (Tooling reference C14772)

Loaded	Unloaded	Cable A	ØB	ØC
I447ZZ	30-I447-ZZ	UT 47	1,4 mm	1 mm
I485ZZ	30-I485-ZZ	UT 85	2,3 mm	1,7 mm



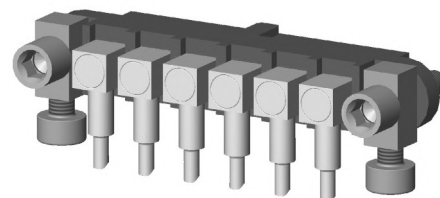
FEMALE 90° ON CABLE SEMI-RIGID P/N 30-24xx-ZZ



MONTING PROCESS :

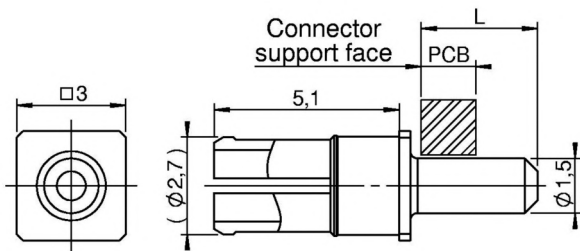
- 1/ Solder conductor over inner contact.
- 2/ Solder cable to body. (Tooling reference C14777)
- 3/ Assembly the cap to body (Tooling reference C14772)

Loaded	Unloaded	Cable A	ØB	ØC
2447ZZ	30-2447-ZZ	UT 47	1,4 mm	1 mm
2485ZZ	30-2485-ZZ	UT 85	2,3 mm	1,7 mm

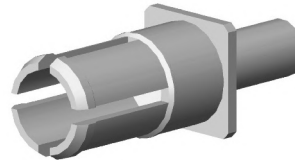


HP : High Power contact series 30

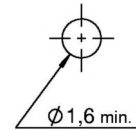
MALE STRAIGHT ON PCB P/N 30-3300-XX



Loaded	Length L
3300CMM	3 mm
330045	4,5 mm

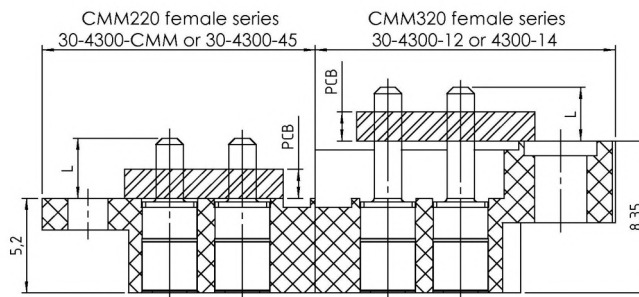
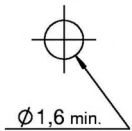


PCB lay-out

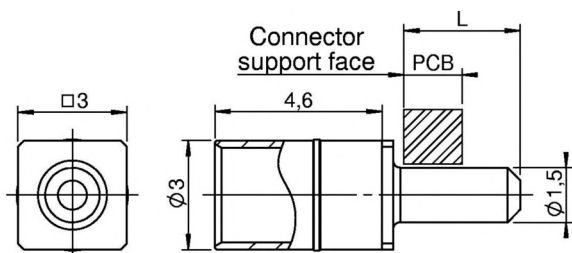
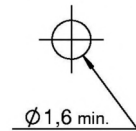


FEMALE STRAIGHT ON PCB P/N 30-4300-XX

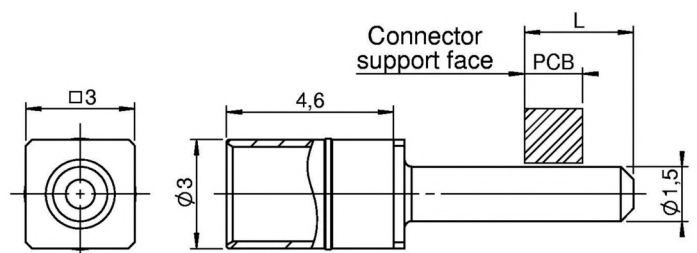
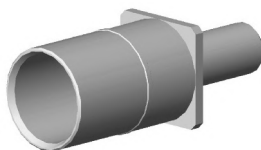
PCB lay-out



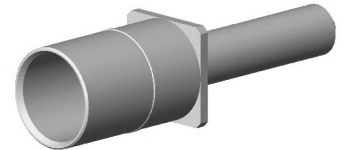
PCB lay-out



Loaded	Length L
4300CMM	3 mm
430045	4,5 mm

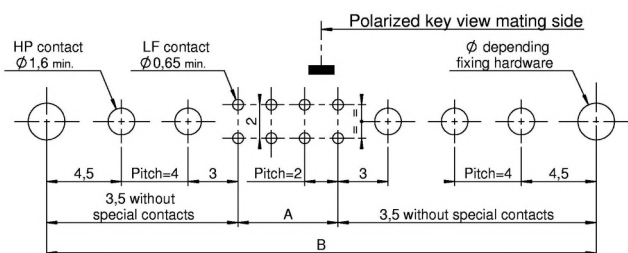


Loaded	Length L
430012	3 mm
430014	4,5 mm



PCB LAYOUT 30-3300-XX & 30-4300-XX

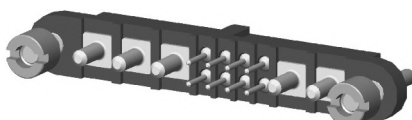
PCB lay-out 220 series



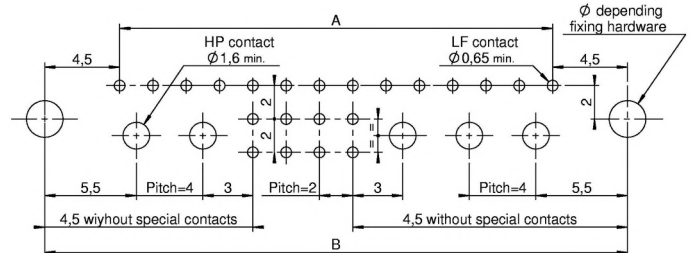
$$A = nn - 2$$

$$B = \{(yy + zz) \times 4\} + A + 7$$

$$B \text{ max.} = 65 \text{ mm}$$



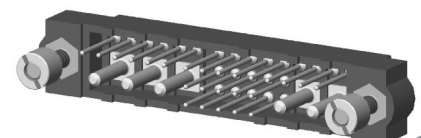
PCB lay-out for CMM320 series (Shown looking onto mating face)



$$A = \left[\frac{\{(yy + zz) \times 4 + nn\} \times 2}{3} \right] - 2$$

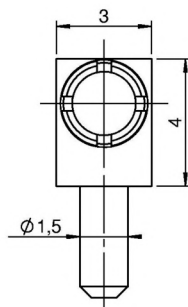
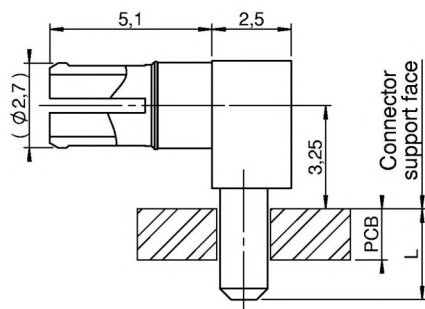
$$B = A + 9$$

$$B \text{ max.} = 87$$

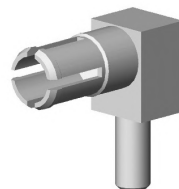


HP : High Power contact series 30

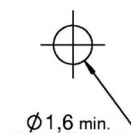
MALE 90° PCB P/N 30-3400-XX



Loaded	Length L
3400CMM	3 mm
340045	4,5 mm

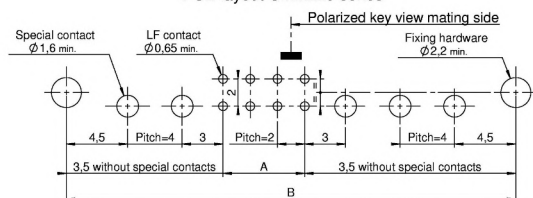


PCB lay-out

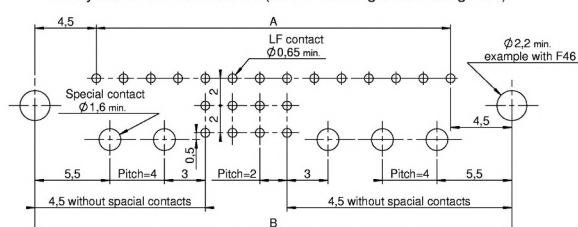


PCB LAYOUT 30-3400-XX

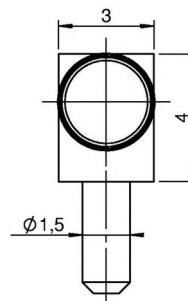
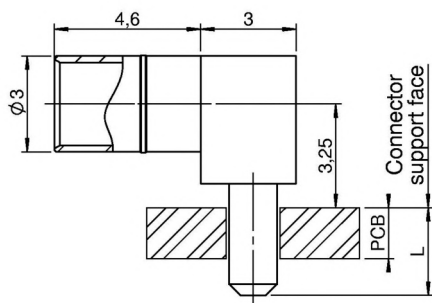
PCB layout CMM220 series



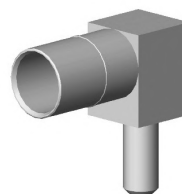
PCB layout for CMM320 series (Shown looking onto mating face)



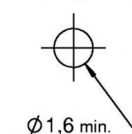
FEMALE 90° PCB P/N 30-4400-XX



Loaded	Length L
4400CMM	3 mm
440045	4,5 mm

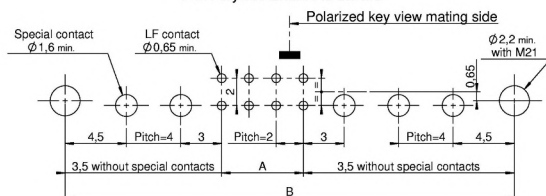


PCB lay-out



PCB LAYOUT 30-4400-XX

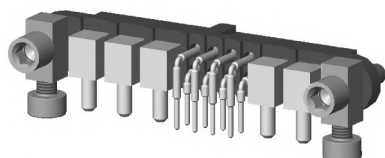
PCB layout CMM220 series



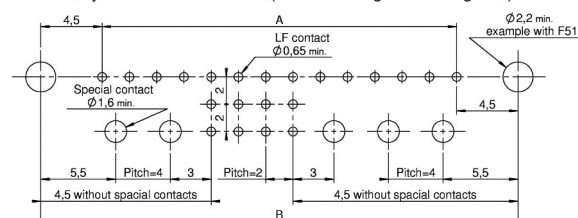
$$A = nn - 2$$

$$B = \{(yy + zz) \times 4\} + A + 7$$

$$B \text{ max.} = 65 \text{ mm}$$



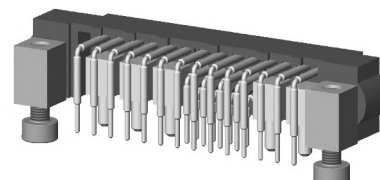
PCB layout for CMM320 series (Shown looking onto mating face)



$$A = \left[\frac{\{(yy + zz) \times 4 + nn\} \times 2}{3} \right] - 2$$

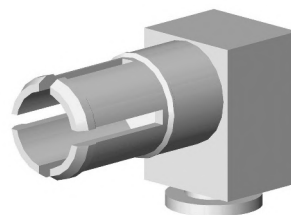
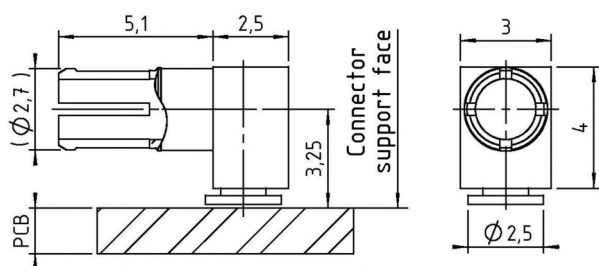
$$B = A + 9$$

$$B \text{ max.} = 87$$

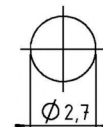


HP : High Power contact series 30

MALE 90° SMT 30-3500

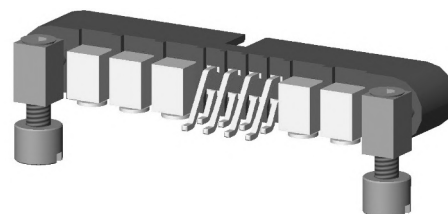
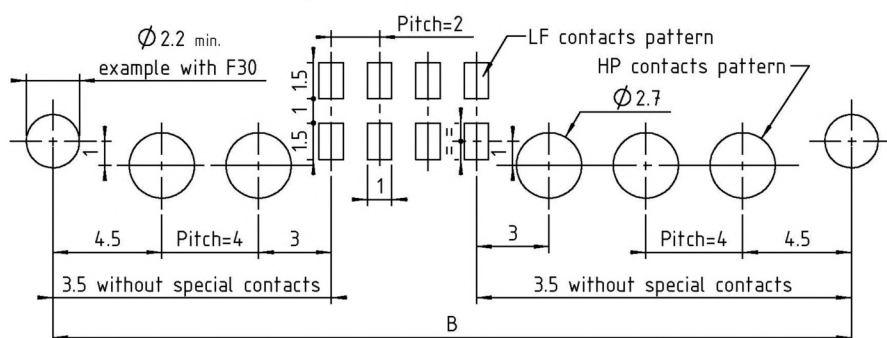


PCB layout

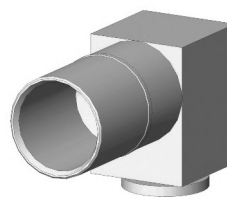
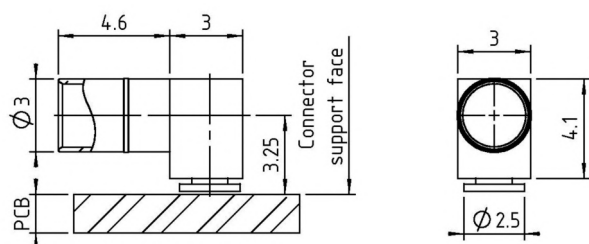


PCB LAYOUT 30-3500

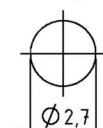
PCB layout for CMM220 male series



FEMALE 90° SMT 30-4500

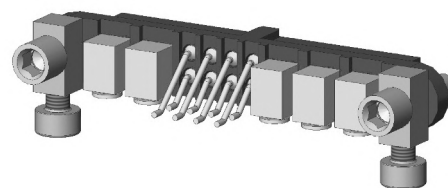
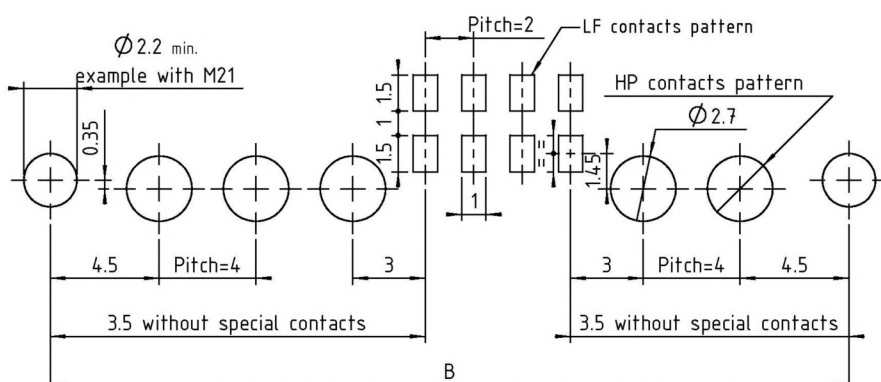


PCB layout



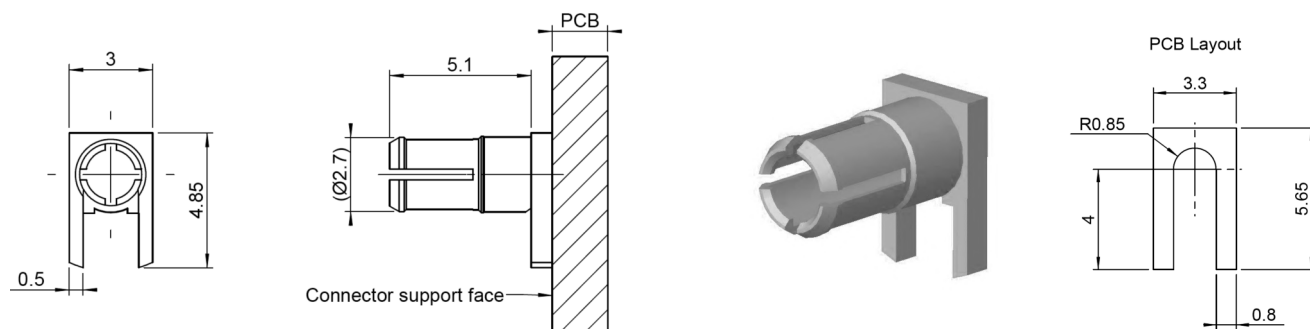
PCB LAYOUT 30-4500

PCB layout for CMM220 female series



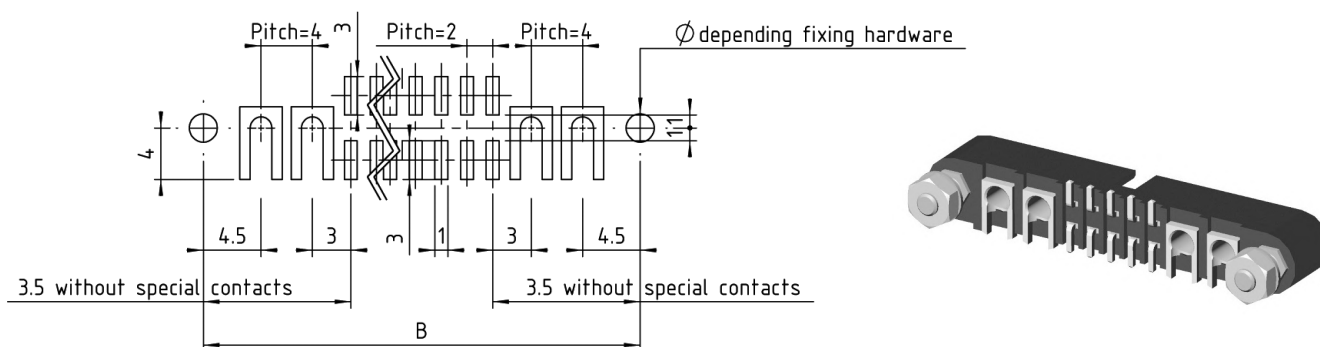
HP : High Power contact series 30

MALE STRAIGHT SMT P/N 30-3600

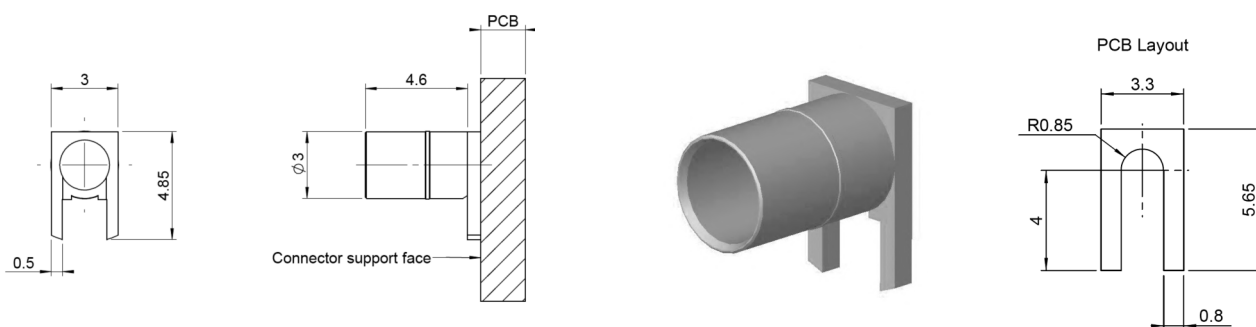


PCB LAYOUT 30-3600

PCB layout for CMM220 male series

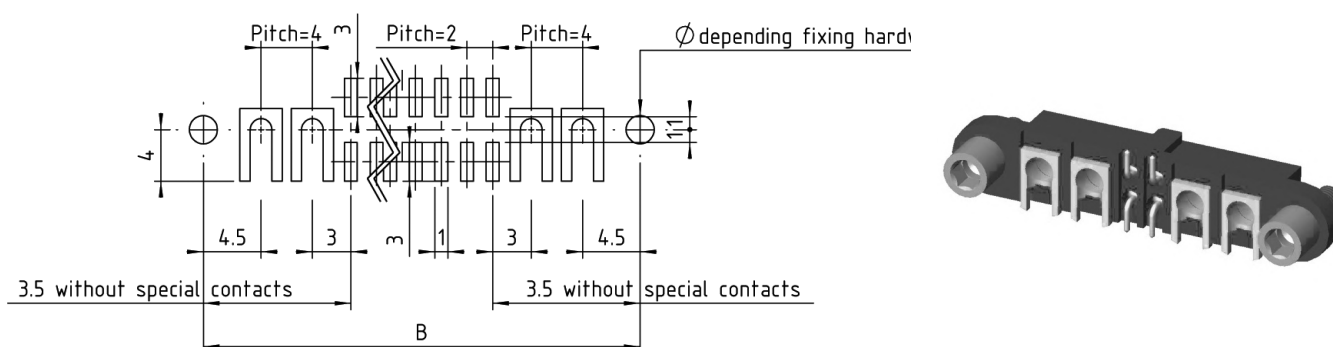


FEMALE STRAIGHT SMT P/N 30-4600



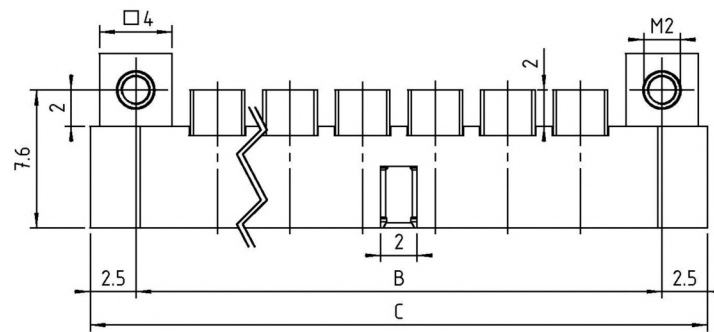
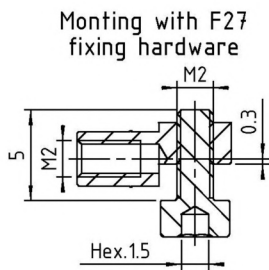
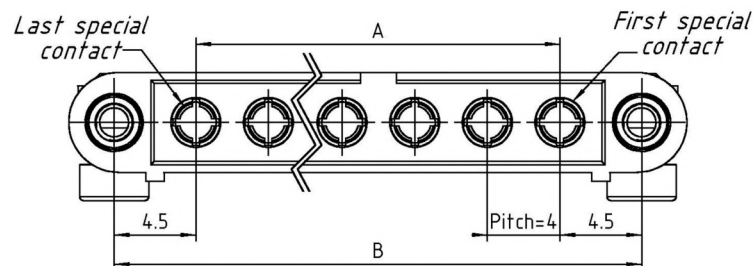
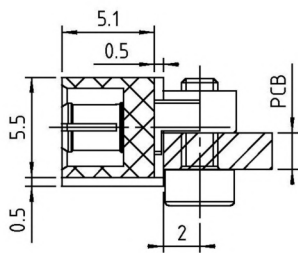
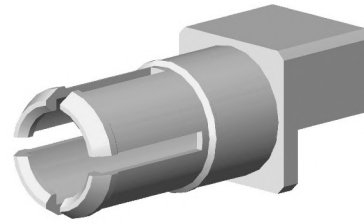
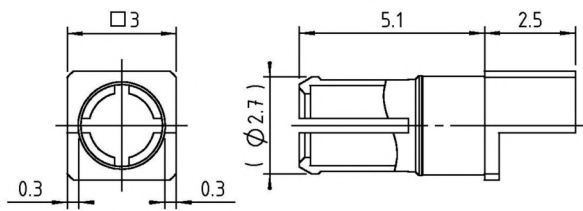
PCB LAYOUT 30-4600

PCB layout for CMM220 female series

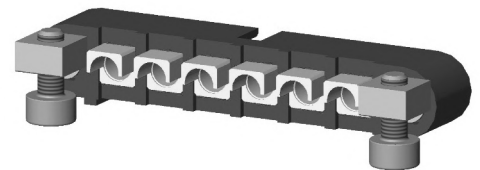
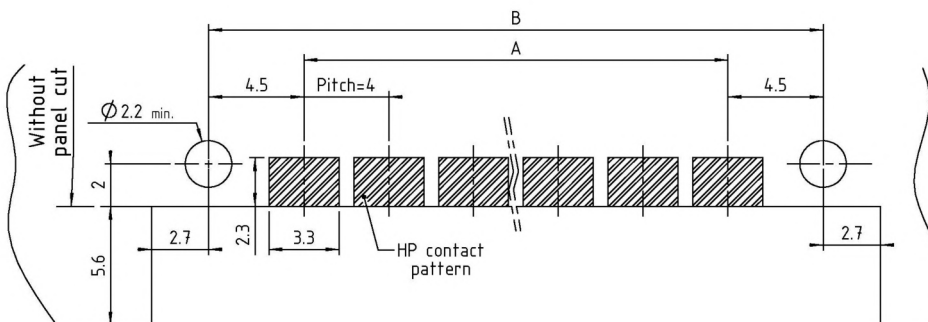


HP : High Power contact series 30

MALE 90° SMT CARD EDGE (WITHOUT LF CONTACTS) 30-3500-CMM



PCB LAYOUT 30-3500-CMM



$$\begin{aligned} A &= (nn \times 4) - 4 \\ B &= A + 9 \\ C &= B + 5 \end{aligned}$$

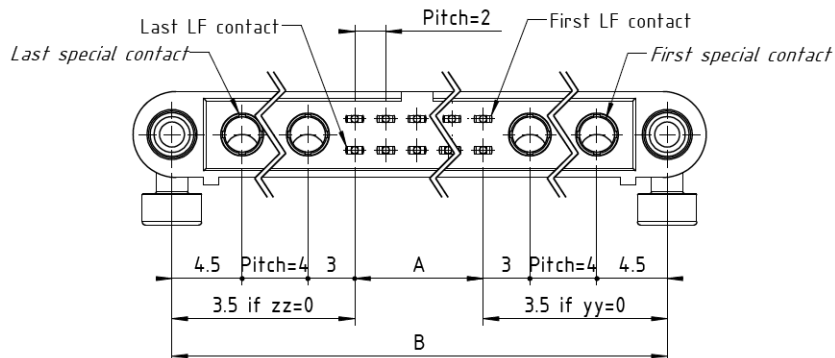
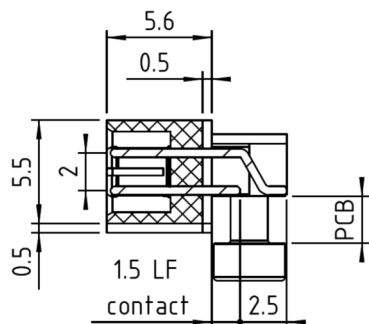
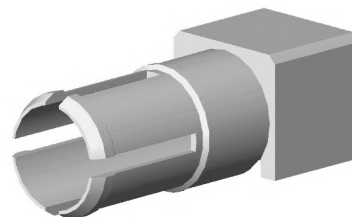
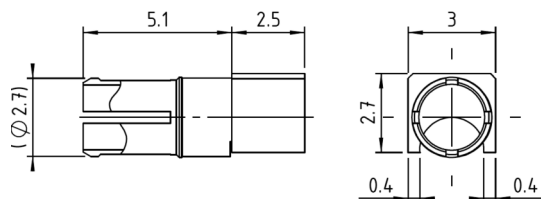
PART NUMBERING

221000 F27 - 00 Z Z - 3500 CMM

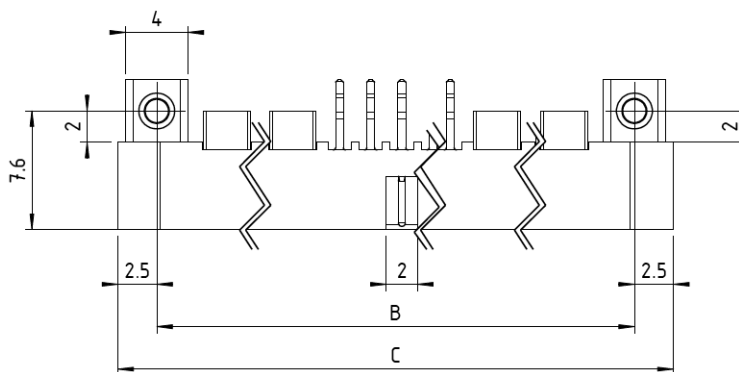
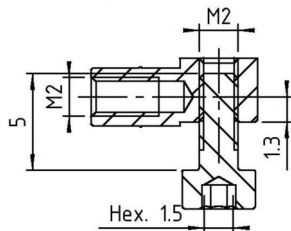
Number of contacts

HP : High Power contact series 30

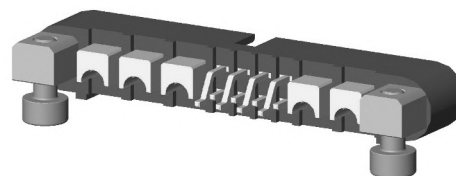
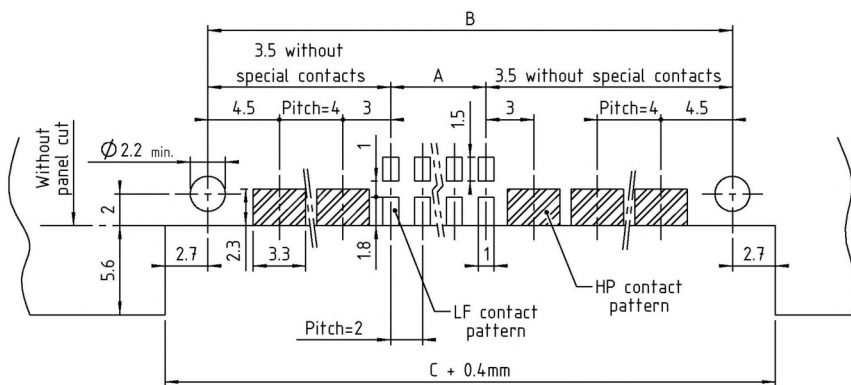
MALE 90° SMT CARD EDGE 30-3500-12 (FOR CMM 220 SERIES)



Mounting with F34
fixing hardware
for CMM220 series

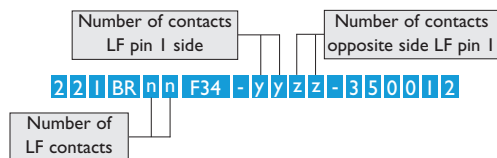


PCB LAYOUT 30-3500-12



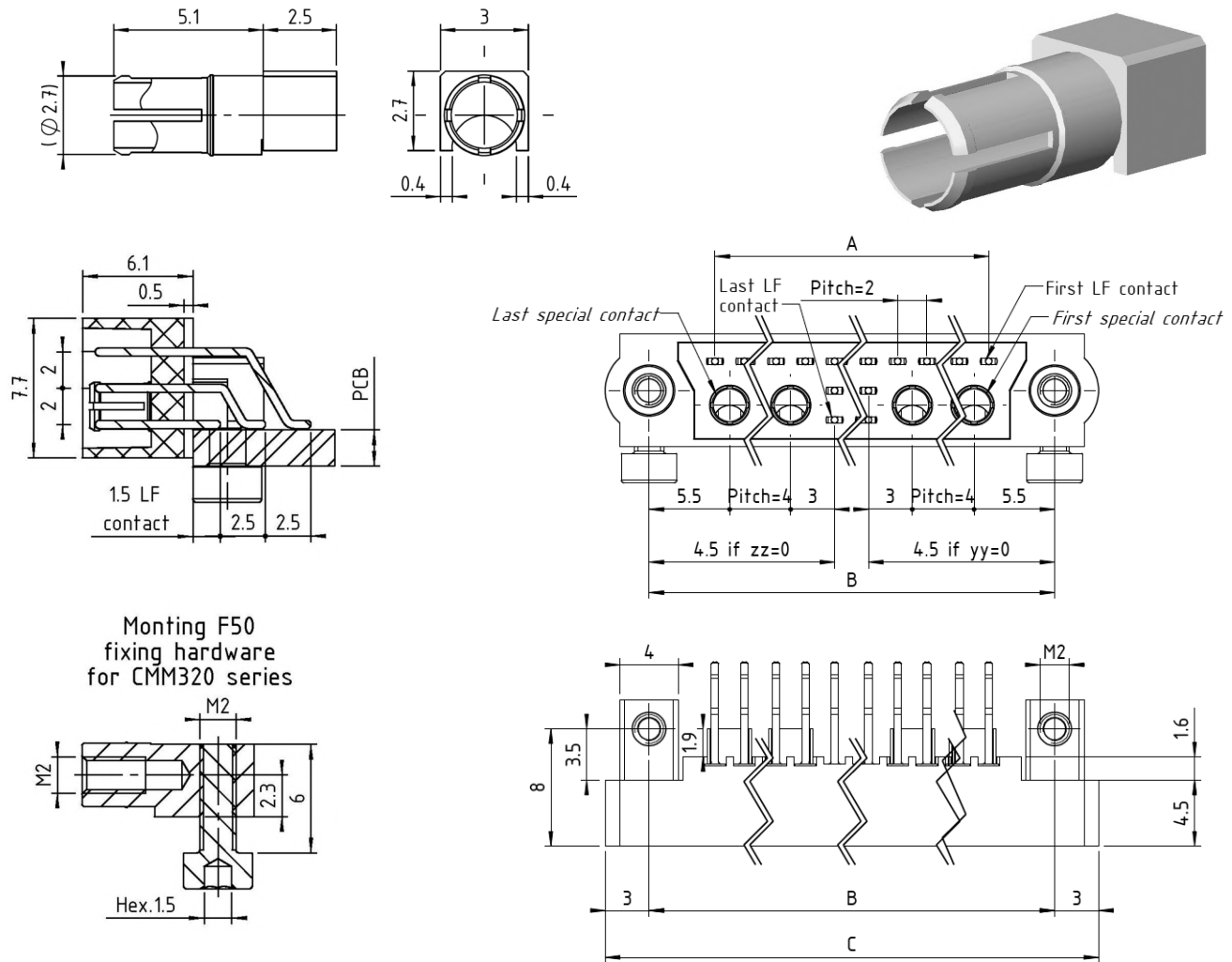
$$\begin{aligned} A &= nn - 2 \\ B &= \{(yy + zz) \times 4\} + A + 7 \\ B \text{ max.} &= 65 \text{ mm} \\ C &= B + 5 \end{aligned}$$

PART NUMBERING

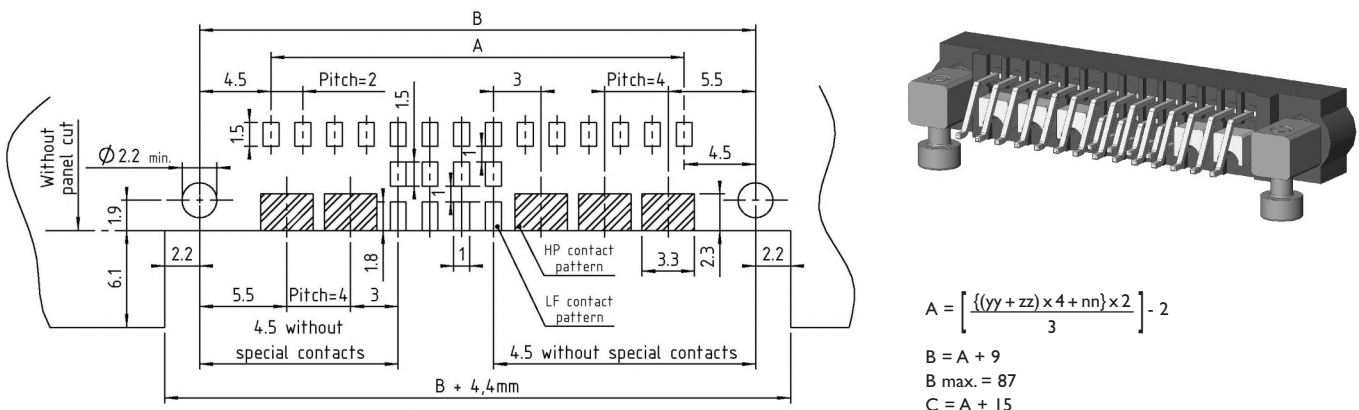


HP : High Power contact series 30

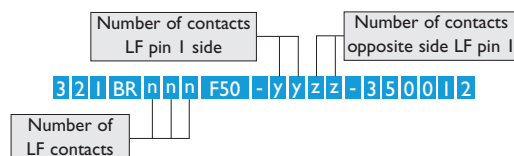
MALE 90° SMT CARD EDGE 30-3500-12 (FOR CMM 320 SERIES)



PCB LAYOUT 30-3500-12

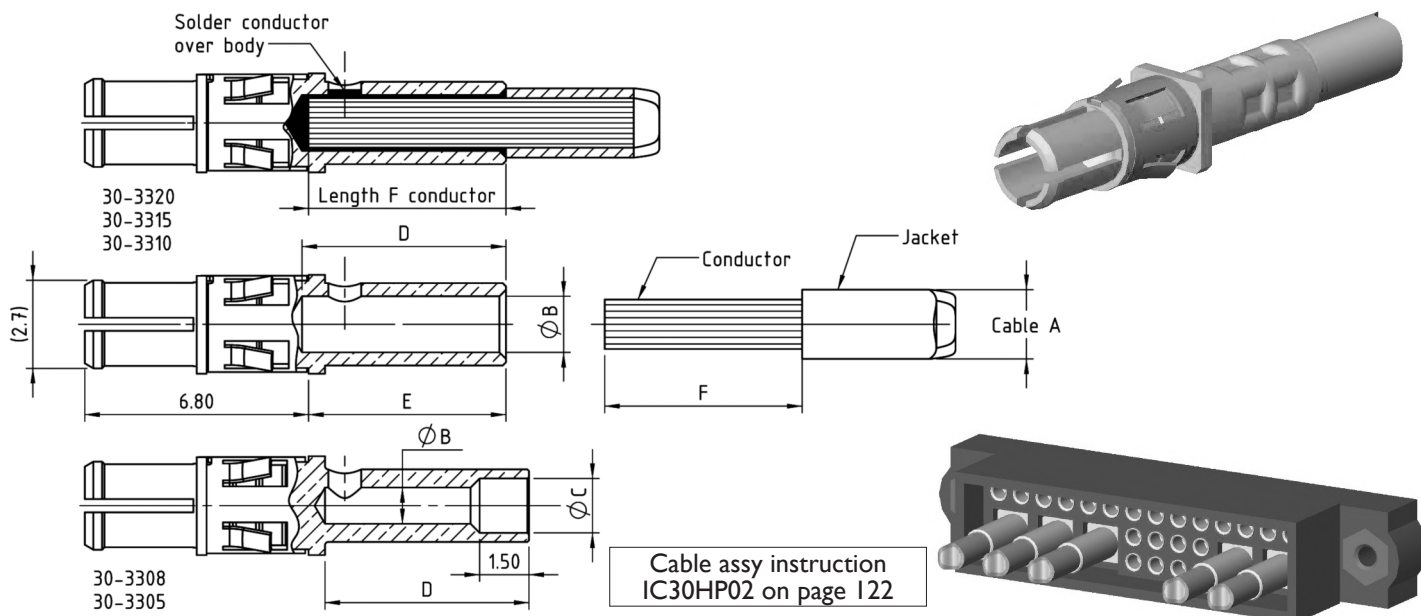


PART NUMBERING



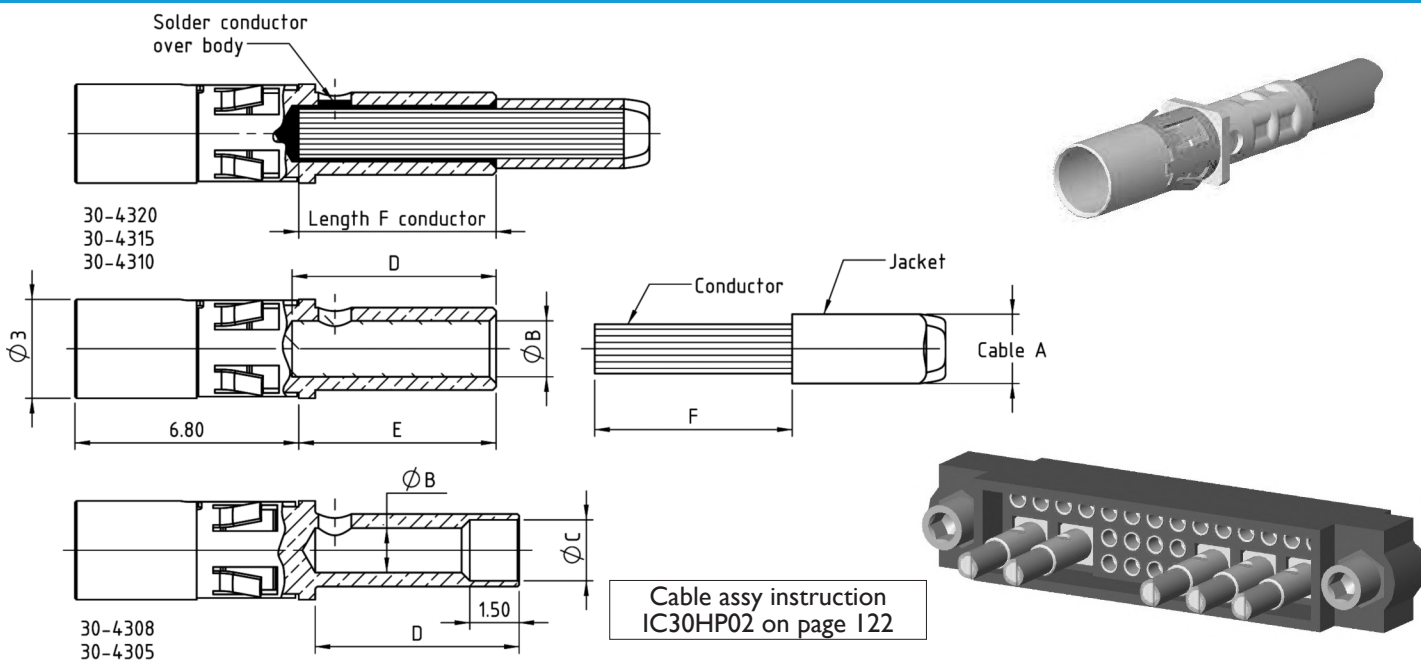
HP : High Power contact series 30

MALE STRAIGHT ON CABLE P/N 30-33xx (solder or crimp)



Loaded	Unloaded	Ampere	Cable A					ØB	ØC	Length D hole	Length E body	Length F conductor	Solder	Crimp by HX3 Hexagone size/Dies	Crimp by AF8
			AWG 20	AWG 18	AWG 16	AWG 14	AWG 12								
3305	30-3305	5A	X					1,1 mm	1,65 mm	6,2 mm	6,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
3308	30-3308	8A		X				1,35 mm	1,85 mm	6,2 mm	6,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
3310	30-3310	10A	X	X	X			1,7 mm		6,2 mm	6 mm	6 mm	OK		OK
3315	30-3315	15A				X		2 mm		6,2 mm	6 mm	6 mm	OK		OK
3320	30-3320	20A					X	2,6 mm		5,5 mm	6 mm	5,3 mm	OK		OK

FEMALE STRAIGHT ON CABLE P/N 30-43xx (solder or crimp)



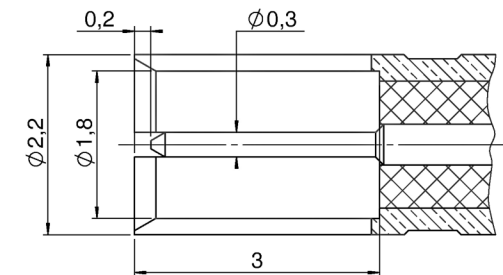
Loaded	Unloaded	Ampere	Cable A					ØB	ØC	Length D hole	Length E body	Length F conductor	Solder	Crimp by HX3 Hexagone size/Dies	Crimp by AF8
			AWG 20	AWG 18	AWG 16	AWG 14	AWG 12								
4305	30-4305	5A	X					1,1 mm	1,65 mm	6,2 mm	6,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
4308	30-4308	8A		X				1,35 mm	1,85 mm	6,2 mm	6,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
4310	30-4310	10A	X	X	X			1,7 mm		6,2 mm	6 mm	6 mm	OK		OK
4315	30-4315	15A				X		2 mm		6,2 mm	6 mm	6 mm	OK		OK
4320	30-4320	20A					X	2,6 mm		5,5 mm	6 mm	5,3 mm	OK		OK

HF : High Frequency contacts series 22

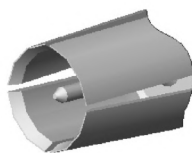
HP : High Power contacts series 22

FOR CMM 340

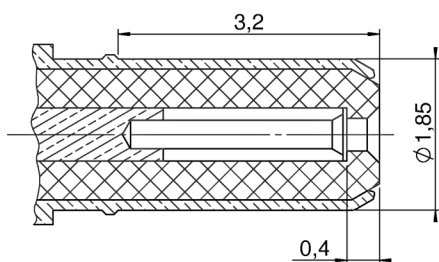
INSERTION



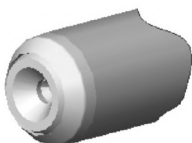
HF female contact insertion



The special contact gender is determined by the body and not by the central contact



HF male contact insertion



PART NUMBERING FOR PCB HF & HP SPECIAL CONTACTS

These two digits are linked to the connector. Do not use them inside a CMM part number when loaded. All dash signs also disappear

Contact type:
3 = straight
4 = right angle
5 = SMT 90°
6 = SMT straight

Termination length
"12" = 1st row 3mm
"22" = 2nd row 3mm
"14" = 1st row 4.5mm
"24" = 2nd row 4.5mm
"..."

Coaxmatic 22™
1 = male coax
2 = female coax
3 = high power male
4 = high power female

22-3-00-

PART NUMBERING FOR HF & HP SPECIAL CONTACTS ON-CABLE

These two digits are linked to the connector. Do not use them inside a CMM part number when loaded. All dash signs also disappear

For HF contacts only Inner contact
Z = solder
S = crimp

For HF contacts only shield
Z = solder
S = crimp

Contact type:
3 = straight
"..."

Use these 2 digits only with 1.2mm dia. cables mounted on a HF straight contact
Crimp shield type: 01 = refer to page 92 02 = refer to page 92

Special contacts :
1 = male HF
2 = female HF
3 = male HP
4 = female HP

22-3-Z-S-75-

Use these 2 digits only with 75 Ohm cables

Contact termination:
10 = for HP 10A
12 = for HF cable 1.2mm
20 = for HF cable 2mm

Dimension Tables

CMM 100/200 SERIES in male & female styles for LF contacts

CMM SERIES 100 & 200 Male	LF contacts number series 100	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
	LF contacts number series 200	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	
	Length in mm	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
	Length in mm (Strap)	B	6,7	8,7	10,7	12,7	14,7	16,7	18,7	20,7	22,7	24,7	26,7	28,7	30,7	32,7	34,7	36,7	38,7	40,7	42,7	44,7	46,7	48,7	50,7	52,7
	Length in mm	C	7,4	9,4	11,4	13,4	15,4	17,4	19,4	21,4	23,4	25,4	27,4	29,4	31,4	33,4	35,4	37,4	39,4	41,4	43,4	45,4	47,4	49,4	51,4	53,4
	Length C with Latches fitted		7,8	9,8	11,8	13,8	15,8	17,8	19,8	21,8	23,8	25,8	27,8	29,8	31,8	33,8	35,8	37,8	39,8	41,8	43,8	45,8	47,8	49,8	51,8	53,8

CMM SERIES 100 & 200 Female	LF contacts number series 100	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
	LF contacts number series 200	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	
	Length in mm	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
	Length in mm	B	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53

LF CONTACTS REFERENCE MARK NUMBER FOR CMM SERIES 200 Male & Female	D	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	F	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	G	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50

CMM 220 SERIES in male & female styles for LF contacts

CMM SERIES 220 Male & Female	LF contacts number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	
	Distance between axis	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58
		B	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65
	Length in mm	C	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
	LF contacts reference mark number	D	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
		E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
		F	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		G	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60

CMM 220 SERIES in male & female styles for HF/HP contacts

CMM 220 Male & Female Special contacts only	Special contacts number		2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Distance between axis	A	4	8	12	16	20	24	28	32	36	40	44	48	52	56
		B	13	17	21	25	29	33	37	41	45	49	53	57	61	65
	Length in mm		C	18	22	26	30	34	38	42	46	50	54	58	62	66

CMM 320 SERIES in male & female styles for LF contacts

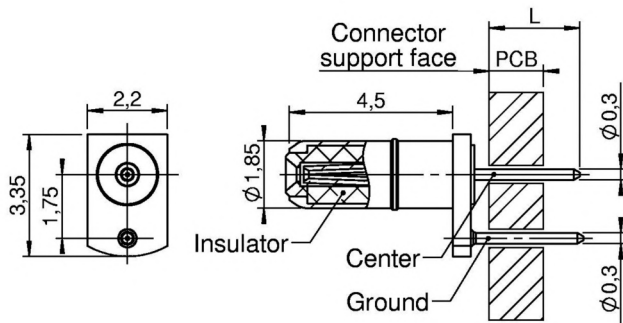
CMM SERIES 320 Male & Female	LF contacts number	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120	
	Distance between axis	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78
		B	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87
	Length in mm	C	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87	89	91	93
	LF contacts reference mark number	D	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
		E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		F	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
		G	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80
		H	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81
J		6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120	

CMM 340 SERIES in male & female styles for HF/HP contacts

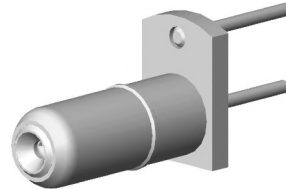
CMM 340	Special contacts number		4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64
Male & Female Special contacts only	Distance between axis	A	2,5	5	7,5	10	12,5	15	17,5	20	22,5	25	27,5	30	32,5	35	37,5	40	42,5	45	47,5	50	52,5	55	57,5	60	62,5	65	67,5	70	72,5	75	77,5
		B	12,5	15	17,5	20	22,5	25	27,5	30	32,5	35	37,5	40	42,5	45	47,5	50	52,5	55	57,5	60	62,5	65	67,5	70	72,5	75	77,5	80	82,5	85	87,5
	Length in mm	C	18,5	21	23,5	26	28,5	31	33,5	36	38,5	41	43,5	46	48,5	51	53,5	56	58,5	61	63,5	66	68,5	71	73,5	76	78,5	81	83,5	86	88,5	91	93,5

HF : High Frequency contacts series 22

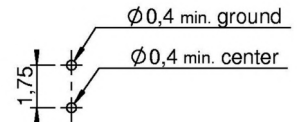
MALE STRAIGHT ON PCB P/N 22-1300-xx



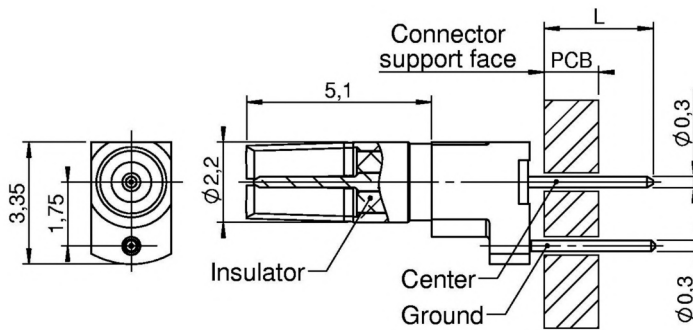
Loaded	Length L
I30012	3 mm
I30014	4,5 mm



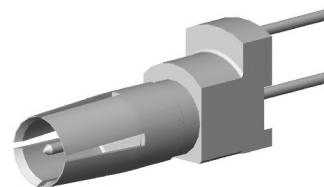
PCB Lay-out



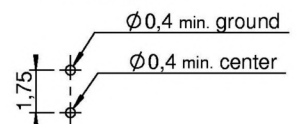
FEMALE STRAIGHT ON PCB P/N 22-2300-xx



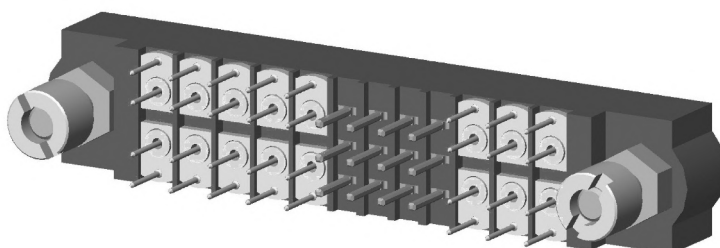
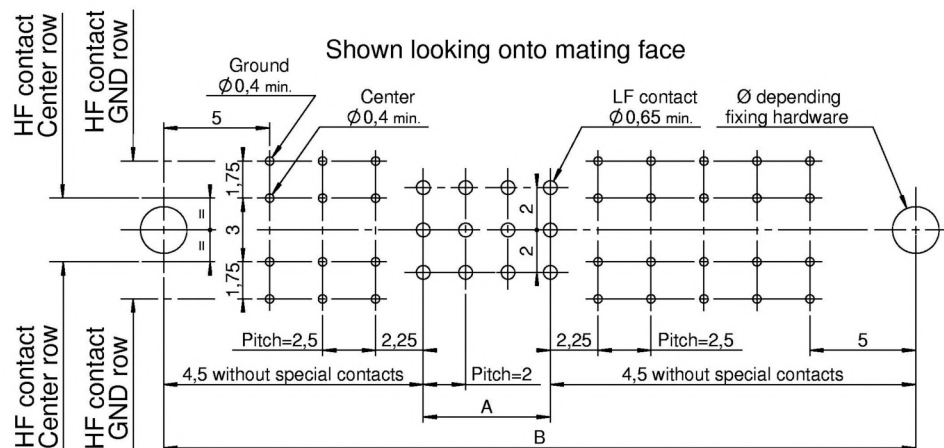
Loaded	Length L
230012	3 mm
230014	4,5 mm



PCB Lay-out



PCB LAYOUT 22-1300-xx & 22-2300-xx



$$A = \left\{ \frac{(nn \times 2)}{3} \right\} - 2$$

if yy and zz $\neq$ 0 :

$$B = \left\{ \left(\frac{(yy) + (zz)}{2} \right) - 2 \right\} \times 2,5 + 14,5 + A$$

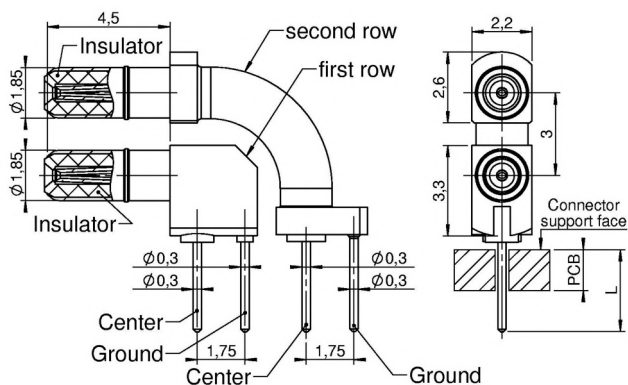
if yy or zz = 0 :

$$B = \left\{ \left(\frac{(yy) \text{ or } (zz)}{2} \right) - 1 \right\} \times 2,5 + 11,75 + A$$

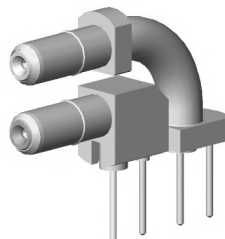
B max. = 87

HF : High Frequency contacts series 22

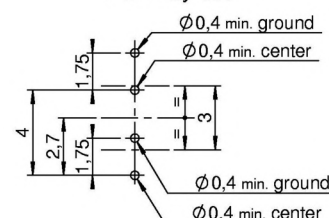
MALE 90° PCB P/N 22-1400-xx



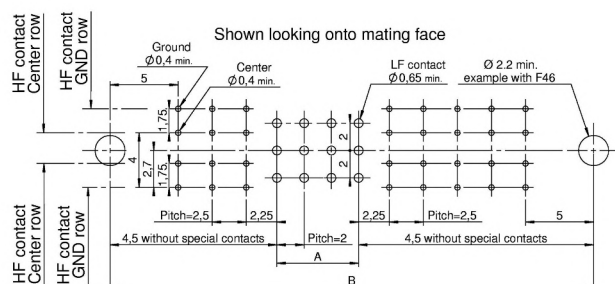
	Loaded		Loaded	Length L
First row	140012	it mounted in same connector	140002	3 mm
Second row	140022			
First row	140014	it mounted in same connector	140004	4,5 mm
Second row	140024			



PCB Lay-out



PCB LAYOUT 22-1400-xx



$$A = \left\{ \frac{(nn \times 2)}{3} \right\} - 2$$

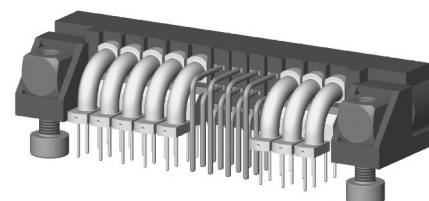
if yy or zz = 0 :

$$B = \left\{ \left(\frac{(yy) + (zz)}{2} \right) - 2 \right\} \times 2,5 + 14,5 + A$$

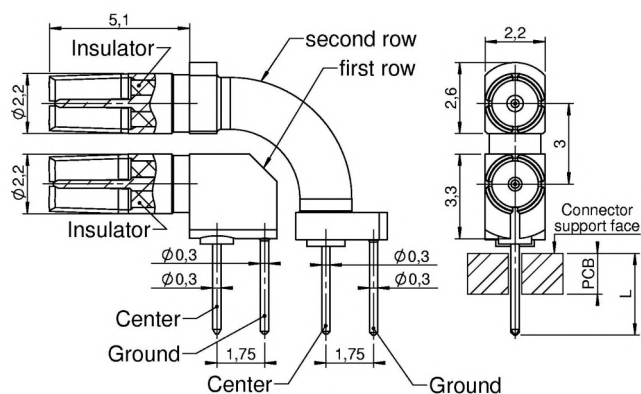
if yy or zz = 0 :

$$B = \left\{ \left(\frac{(yy) \text{ or } (zz)}{2} \right) - 1 \right\} \times 2,5 + 11,75 + A$$

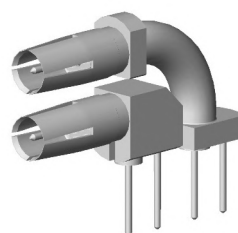
B max. = 87



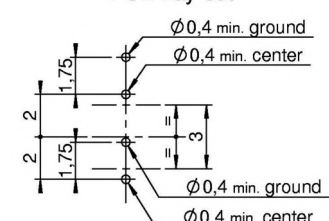
FEMALE 90° PCB P/N 22-2400-xx



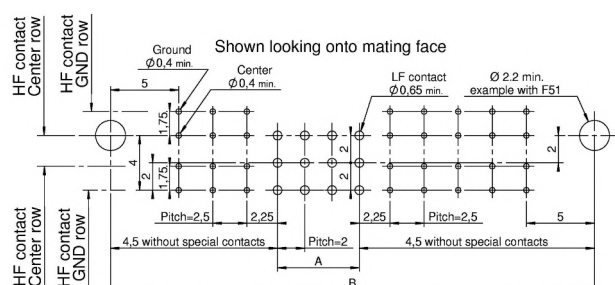
	Loaded		Loaded	Length L
First row	240012	it mounted in same connector	240002	3 mm
Second row	240022			
First row	240014	it mounted in same connector	240004	4,5 mm
Second row	240024			



PCB Lay-out



PCB LAYOUT 22-2400-xx



$$A = \left\{ \frac{(nn \times 2)}{3} \right\} - 2$$

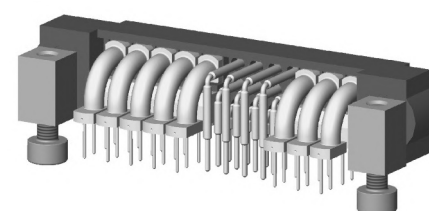
if yy and zz = 0 :

$$B = \left\{ \left(\frac{(yy) + (zz)}{2} \right) - 2 \right\} \times 2,5 + 14,5 + A$$

if yy or zz = 0 :

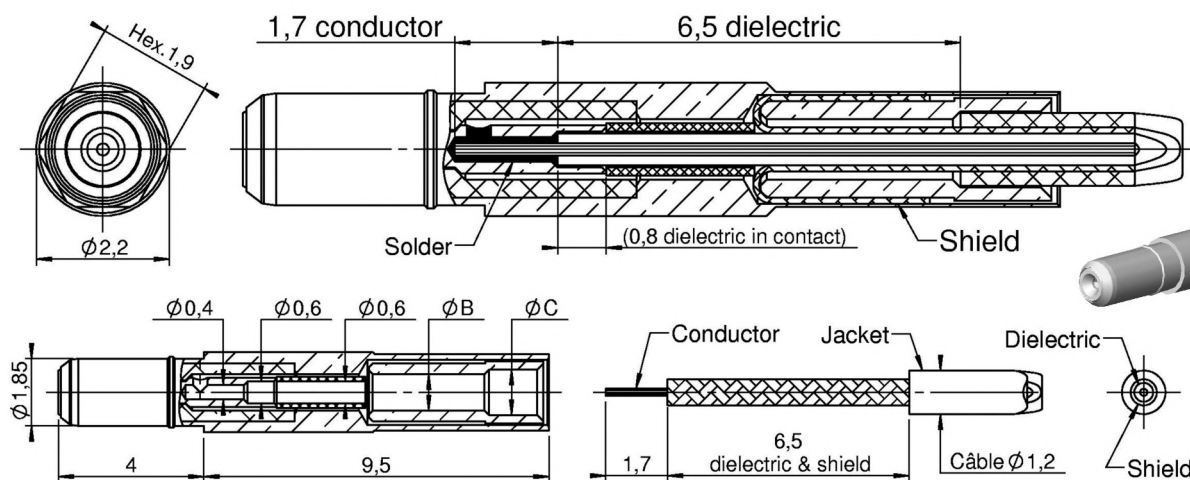
$$B = \left\{ \left(\frac{(yy) \text{ or } (zz)}{2} \right) - 1 \right\} \times 2,5 + 11,75 + A$$

B max. = 87



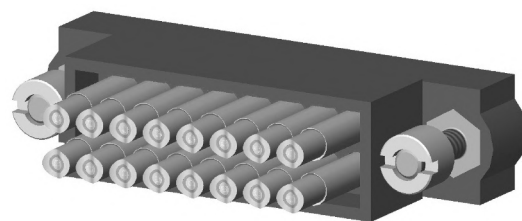
HF : High Frequency contacts series 22

MALE STRAIGHT TO CRIMP ON CABLE Ø 1.2 P/N 22-1312-ZS-xx

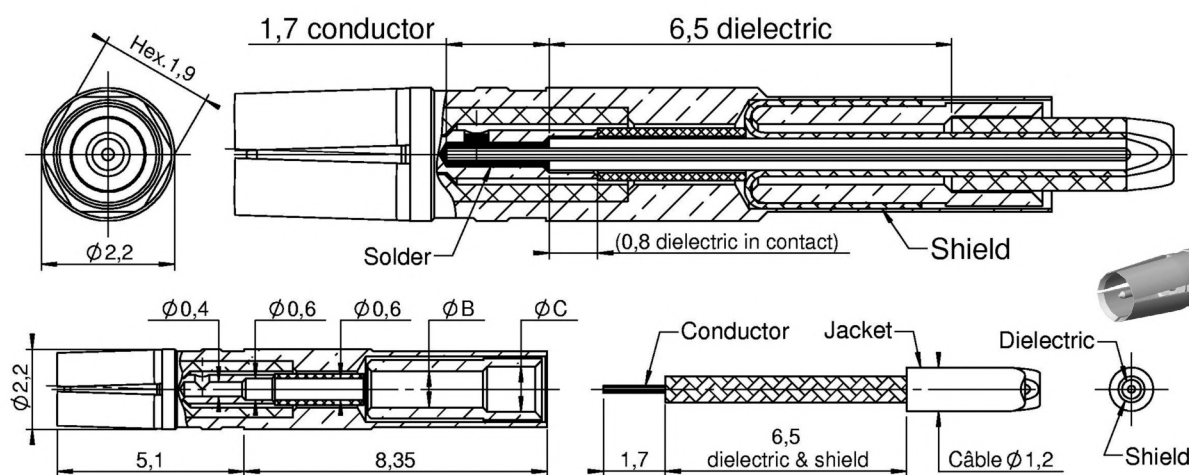


Cable assy instruction IC22HF01 on page I 16

Loaded	Unloaded	ØB	ØC	
I312ZS01	22-1312-ZS-01	1 mm	1,25 mm	For cable type NEXANS 50VMTX
I312ZS02	22-1312-ZS-02	0,85 mm	1,15 mm	For cable type AXON SM50

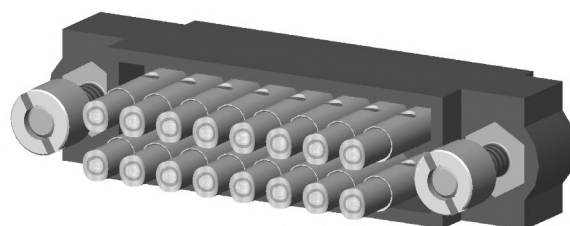


FEMALE STRAIGHT TO CRIMP ON CABLE Ø 1.2 P/N 22-2312-ZS-xx



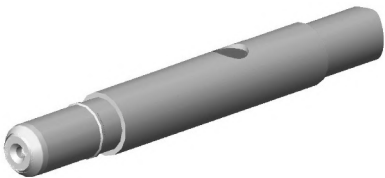
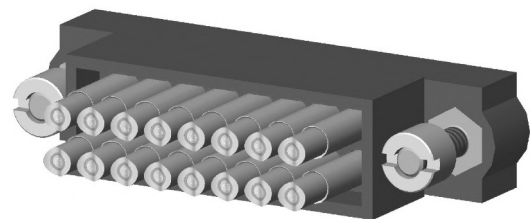
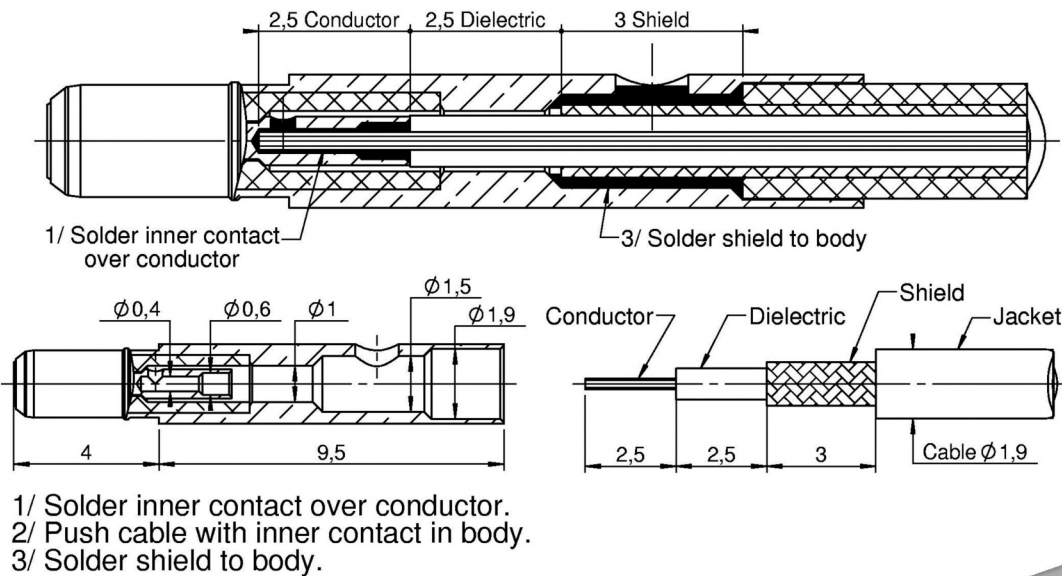
Cable assy instruction IC22HF02 on page I 17

Loaded	Unloaded	ØB	ØC	
2312ZS01	22-2312-ZS-01	1 mm	1,25 mm	For cable type NEXANS 50VMTX
2312ZS02	22-2312-ZS-02	0,85 mm	1,15 mm	For cable type AXON SM50



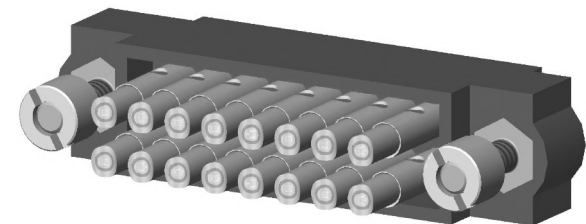
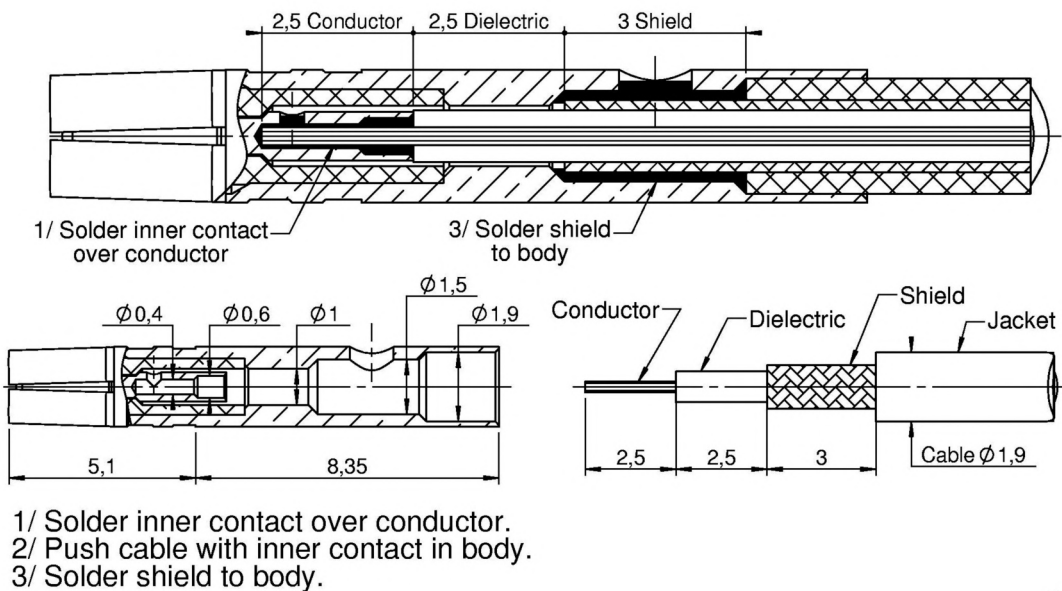
HF : High Frequency contacts series 22

MALE STRAIGHT ON CABLE P/N 22-1320-ZZ



Loaded	Unloaded
1320ZZ	22-1320-ZZ

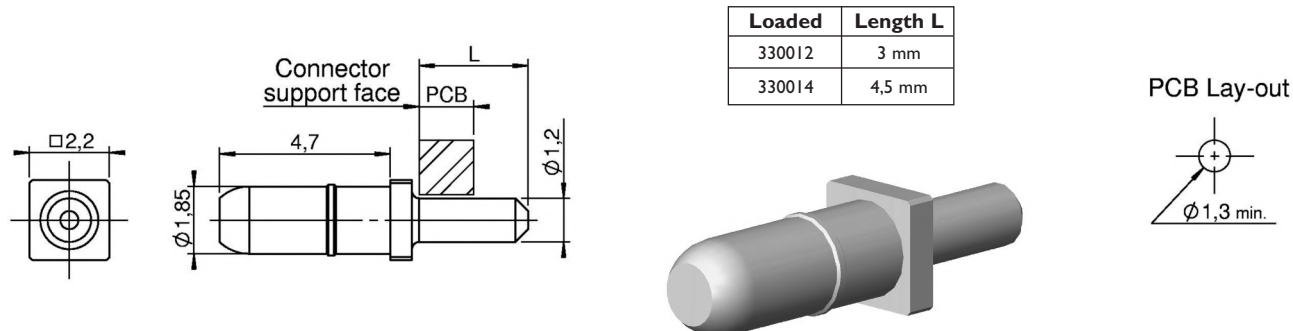
FEMALE STRAIGHT ON CABLE P/N 22-2320-ZZ



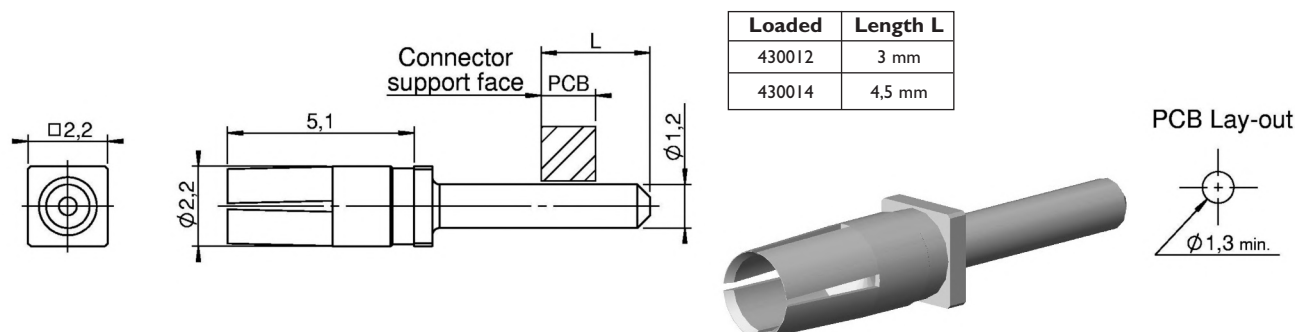
Loaded	Unloaded
2320ZZ	22-2320-ZZ

HP : High power contacts series 22

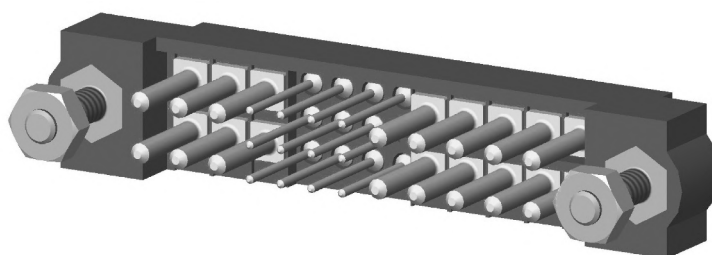
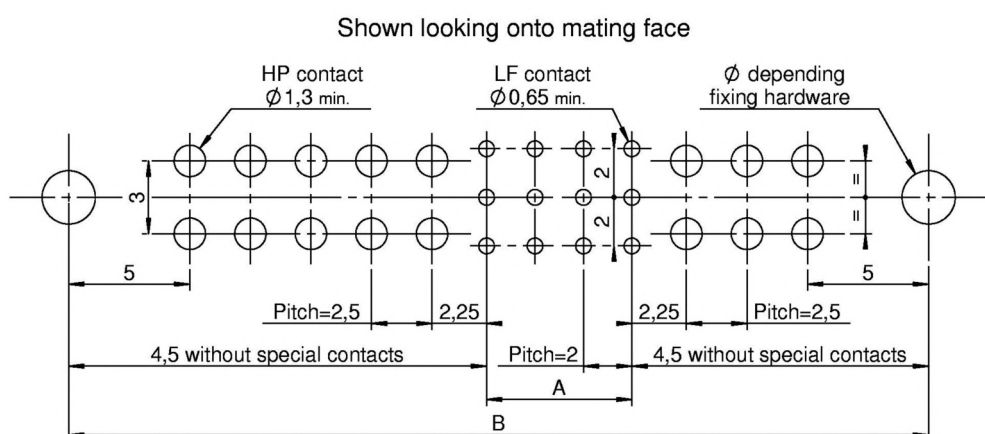
MALE STRAIGHT ON PCB P/N 22-3300-xx



FEMALE STRAIGHT ON PCB P/N 22-4300-xx



PCB LAYOUT 22-3300-xx & 22-4300-xx



$$A = \left\lceil \frac{(nnx2)}{3} \right\rceil - 2$$

if yy and zz $\neq 0$:

$$B = \left\lceil \left(\frac{(yy)+(zz)}{2} \right) - 2 \right\rceil \times 2,5 + 14,5 + A$$

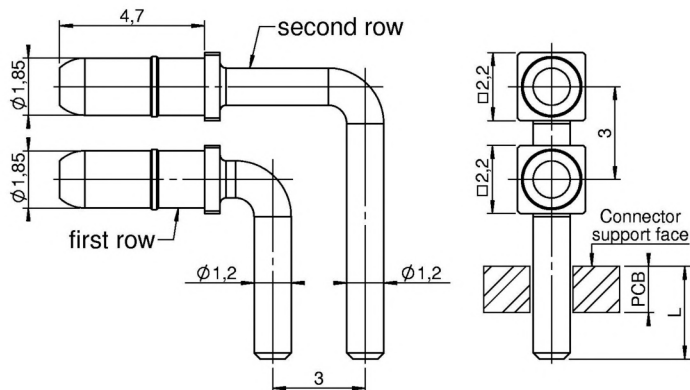
if yy or zz = 0 :

$$B = \left\lceil \left(\frac{(yy)+(zz)}{2} \right) - 1 \right\rceil \times 2,5 + 11,75 + A$$

B max. = 87

HP : High power contacts series 22

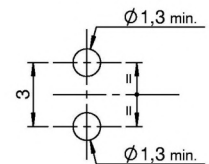
MALE 90° PCB P/N 22-3400-xx



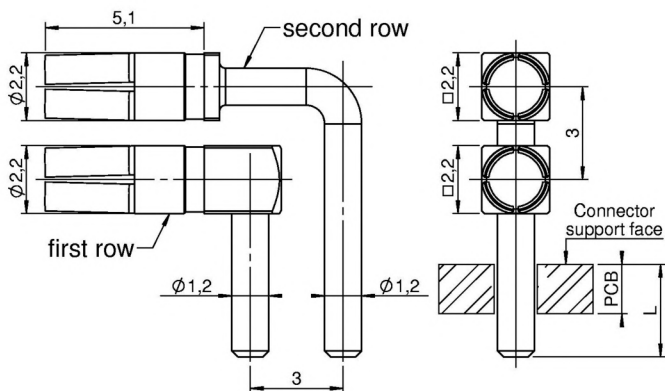
	Loaded		Loaded	Length L
First row	340012	it mounted in same connector	340002	3 mm
Second row	340022			
First row	340014	it mounted in same connector	340004	4,5 mm
Second row	340024			



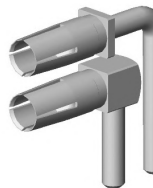
PCB Lay-out



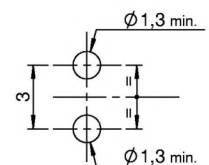
FEMALE 90° PCB P/N 22-4400-xx



	Loaded		Loaded	Length L
First row	440012	it mounted in same connector	440002	3 mm
Second row	440022			
First row	440014	it mounted in same connector	440004	4,5 mm
Second row	440024			

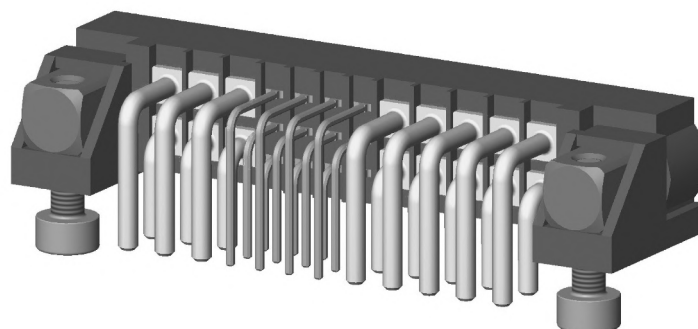
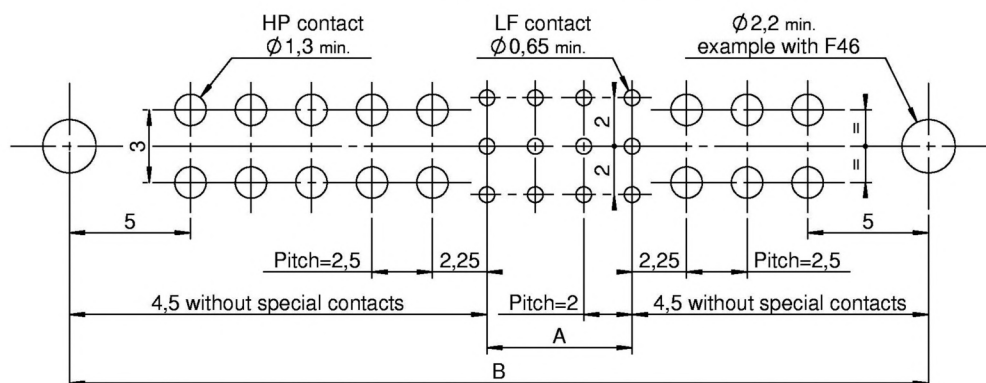


PCB Lay-out



PCB LAYOUT 22-3400-xx & 22-4400-xx

Shown looking onto mating face



$$A = \left\{ \frac{(nn \times 2)}{3} \right\} - 2$$

if yy and zz $\neq$ 0 :

$$B = \left\{ \left(\frac{(yy) + (zz)}{2} \right) - 2 \right\} \times 2.5 + 14.5 + A$$

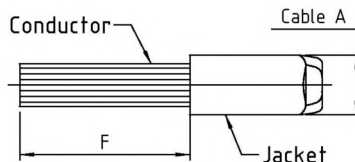
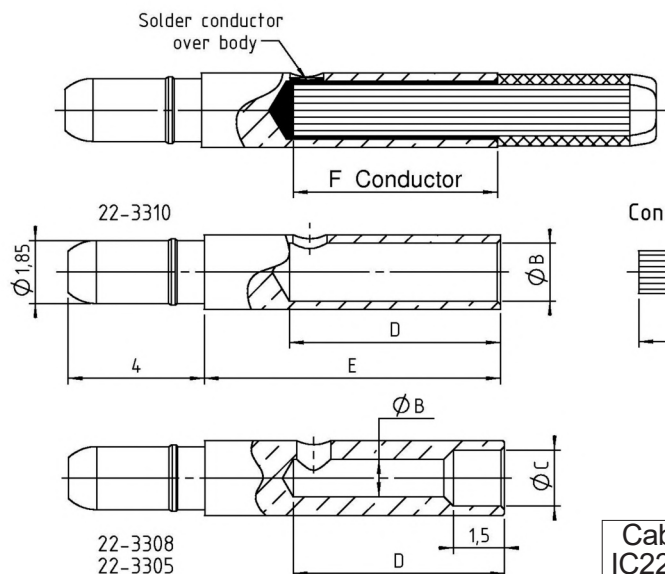
if yy or zz = 0 :

$$B = \left\{ \left(\frac{(yy) \text{ or } (zz)}{2} \right) - 1 \right\} \times 2.5 + 11.75 + A$$

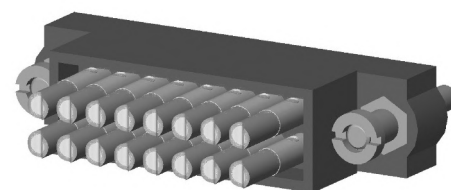
B max. = 87

HP : High power contacts series 22

MALE STRAIGHT ON CABLE P/N 22-33XX (solder & crimp)



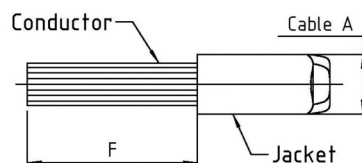
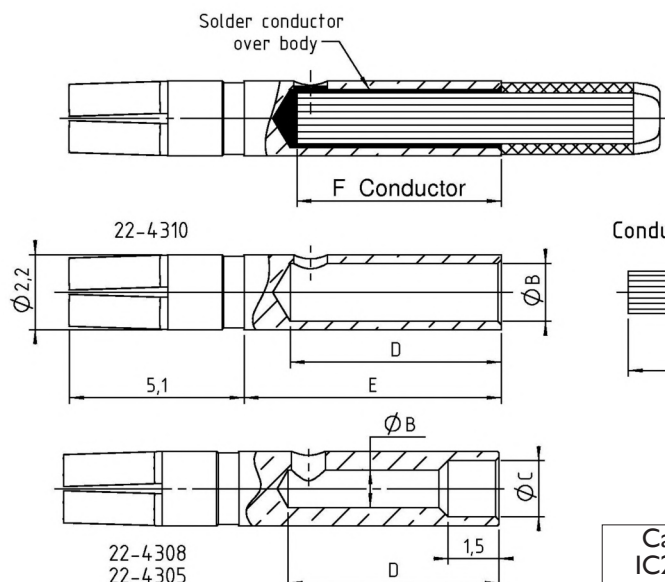
Cable assy instruction
IC22HP02 on page 121



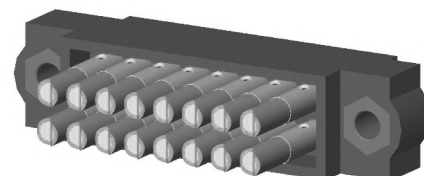
Loaded	Unloaded	Ampere	Cable A			ØB	ØC	Length D hole	Length E body	Length F conductor	Solder	Crimpy HX3 Hexagone size/Dies	Crimp by AF8
			AWG 20	AWG 18	AWG 16								
3305	22-3305	5A	X			1,1 mm	1,65 mm	6,2 mm	8,8 mm	4,5 mm	OK	Hex. 1,9 mm/CI4923	OK
3308	22-3308	8A		X		1,35 mm	1,85 mm	6,2 mm	8,8 mm	4,5 mm	OK	Hex. 1,9 mm/CI4923	OK
3310	22-3310	10A	X	X	X	1,7 mm		6,2 mm	8,8 mm	6 mm	OK	Hex. 1,9 mm/CI4923*	OK

* only for AWG 16

FEMALE STRAIGHT ON CABLE P/N 22-43XX (solder & crimp)



Cable assy instruction
IC22HP02 on page 121



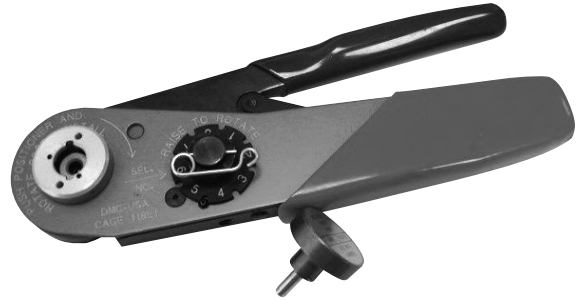
Loaded	Unloaded	Ampere	Cable A			ØB	ØC	Length D hole	Length E body	Length F conductor	Solder	Crimpy HX3 Hexagone size/Dies	Crimp by AF8
			AWG 20	AWG 18	AWG 16								
4305	22-4305	5A	X			1,1 mm	1,65 mm	6,2 mm	7,7 mm	4,5 mm	OK	Hex. 1,9 mm/CI4923	OK
4308	22-4308	8A		X		1,35 mm	1,85 mm	6,2 mm	7,7 mm	4,5 mm	OK	Hex. 1,9 mm/CI4923	OK
4310	22-4310	10A	X	X	X	1,7 mm		6,2 mm	7,7 mm	6 mm	OK	Hex. 1,9 mm/CI4923*	OK

* only for AWG 16

Tools

DANIELS MH800 TOOL AND POSITIONER P/N K1131 & K1692

Tools reference	Barrel
DANIELS MH800 only	MH800
Positioner K1692 only	CI2929
Positioner K1131 only	K1131
DANIELS MH800 & K1131	CI2237
DANIELS MH800 & K1692	CI4925



Crimp barrel accommodation for LF contacts					
Hand crimp tool reference	Positioner	Contacts type	Contacts reference	Wire size (AWG)	Crimp tool setting
DANIELS MH800	K1692	Male C	I2960	22	6
DANIELS MH800	K1692	Male S	I2969	24	7
DANIELS MH800	K1692	Male S	I2969	26 & 28	6
DANIELS MH800	K1692	Female C	CI3064-P	22	6
DANIELS MH800	K1692	Female S	CI2468	24	7
DANIELS MH800	K1692	Female S	CI2468	26 & 28	6

Crimp barrel accommodation for central contact HF30 series			
Hand crimp tool reference	Positioner	Conductor	Crimp tool setting
DANIELS MH800	K1131	Ø 0,30	2 & 3
DANIELS MH800	K1131	Ø 0,50	3 & 4

DANIELS AF8 TOOL P/N 16459

Tools reference	Reference Nicomatic
DANIELS AF8 only	I6459
DANIELS AF8 + CI6460	CI6462
DANIELS AF8 + CI6461	CI6463



Crimp barrel accommodation for crimping HP contact		
Hand crimp tool reference	Positioner	HP contact serie
DANIELS AF8	CI6460	30
DANIELS AF8	CI6461	22



Tools

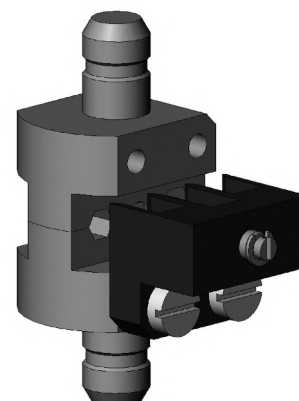
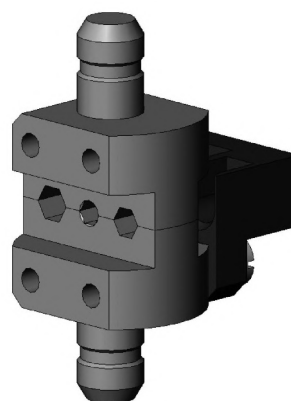
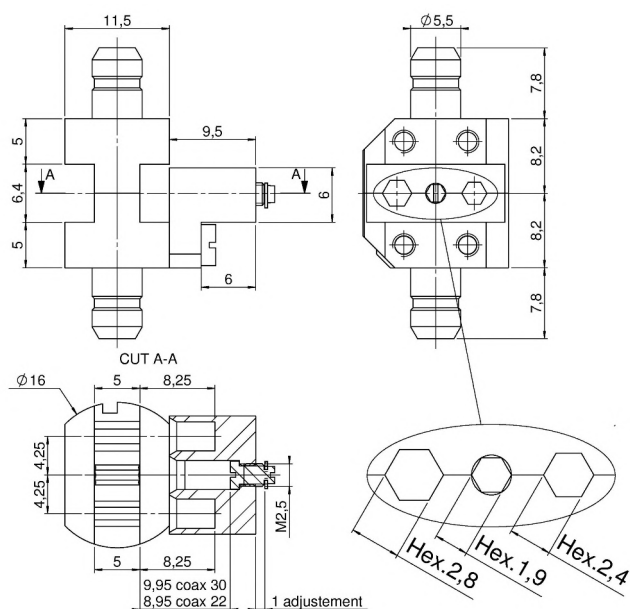
DANIELS HX3 TOOL P/N 13858

Tools reference	Reference Nicomatic
DANIELS HX3 only	I3858
DANIELS HX3 & C13847	C12238
DANIELS HX3 & C14680	C14770

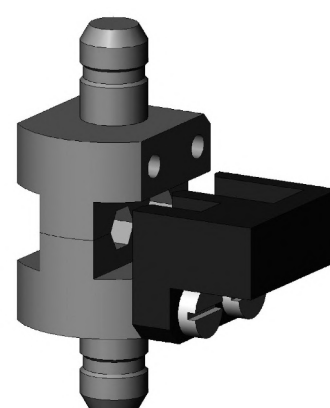
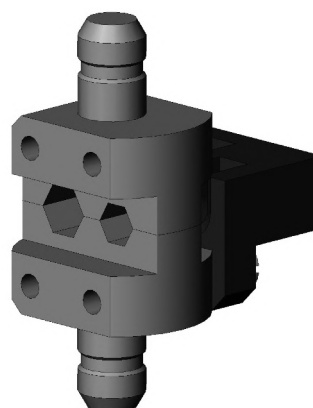
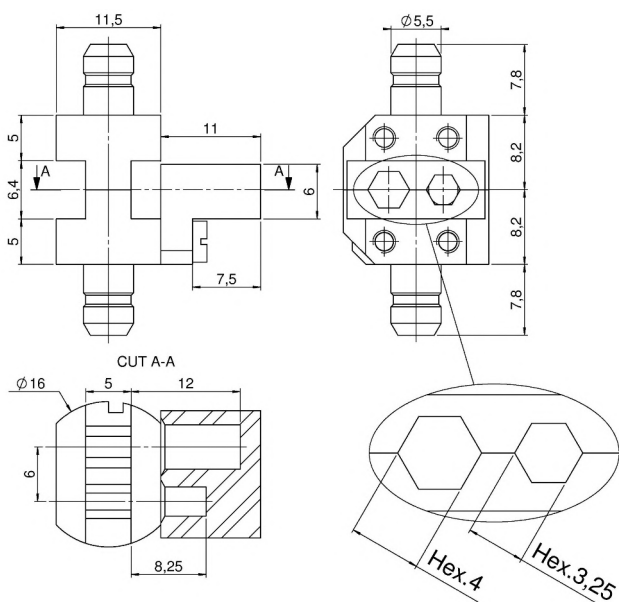


Crimp barrel accomodation for crimping coaxial contact shield		
Hand crimp tool reference	Dies	Hexagonal imprint
DANIELS HX3	C13847	Hex. 1,9 / Hex. 2,4 / Hex. 2,8
DANIELS HX3	C14680	Hex. 3,25 / Hex. 4

CRIMP DIE C13847 FOR DANIELS HX3 TOOL (HF CONTACT)

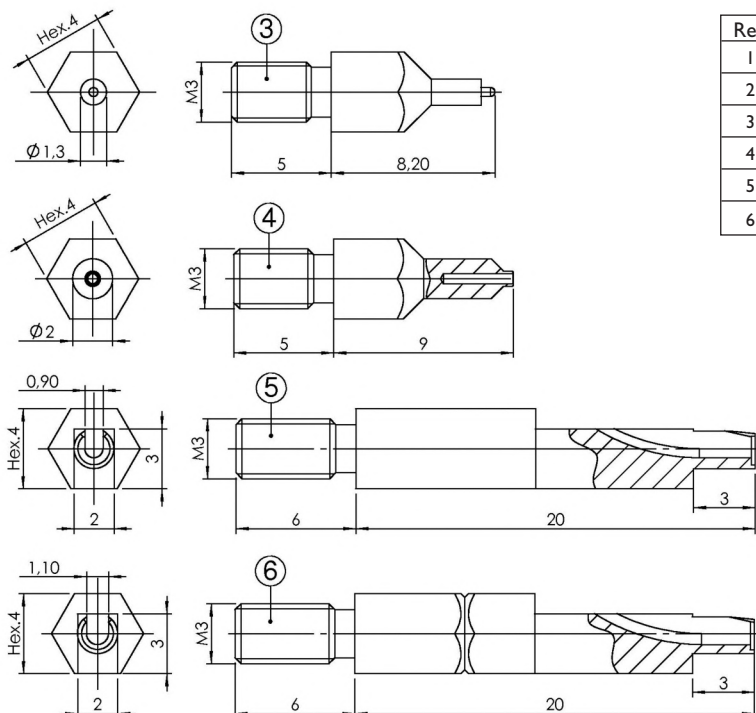


CRIMP DIE C14680 FOR DANIELS HX3 TOOL (HF CONTACT)

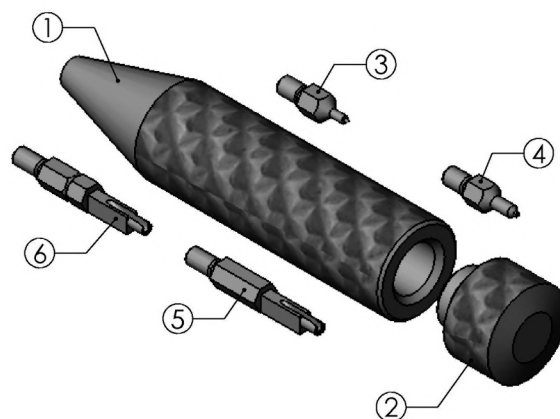


Tools

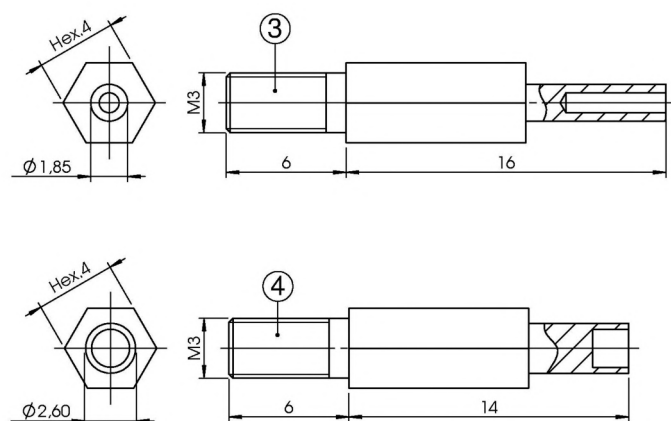
LF CONTACTS INSERTION & WITHDRAWAL TOOL P/N C12935



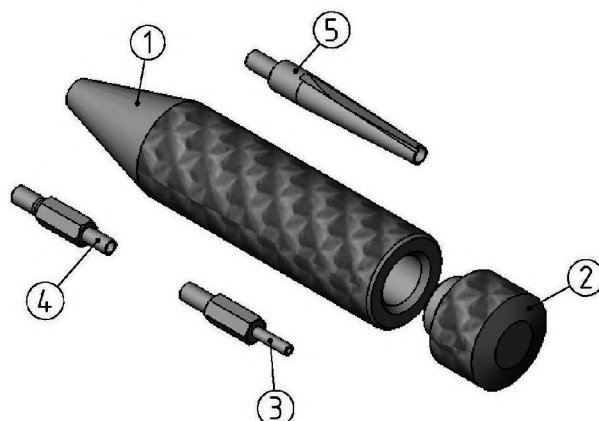
Rep	Reference	Assembly C12935
1	13241	Body
2	13240	Plug
3	13170	Female contact extraction tip
4	13242	Male contact extraction tip
5	13171	24-28 AWG insertion tip
6	13712	22 AWG insertion tip



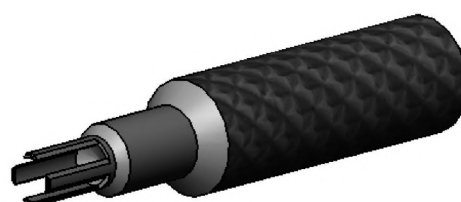
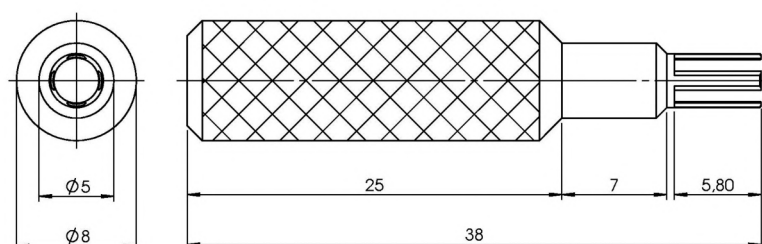
HF / HP SERIES 22 CONTACTS REMOVAL P/N C13997



Rep	Reference	Assembly C13997
1	13241	Body
2	13240	Plug
3	13995	Female contact extraction tip
4	13996	Male contact extraction tip
5	16139	Male & female contact insertion tool

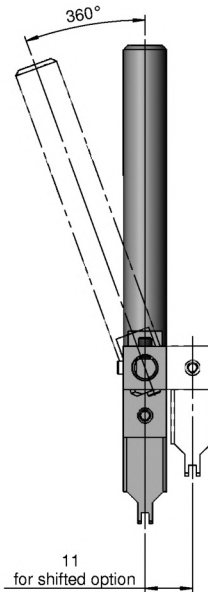
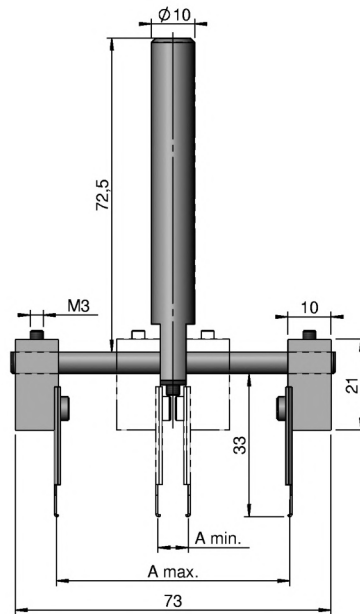
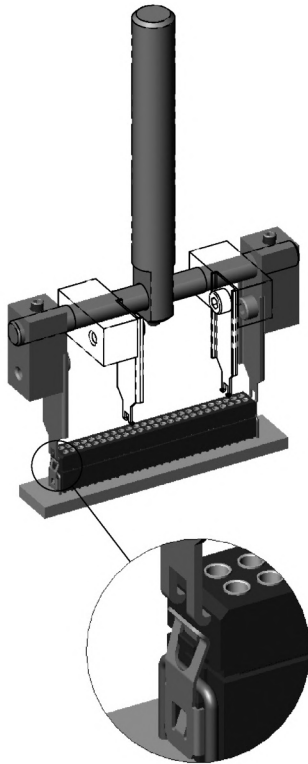


HF / HP SERIES 30 CONTACTS REMOVAL P/N 12368



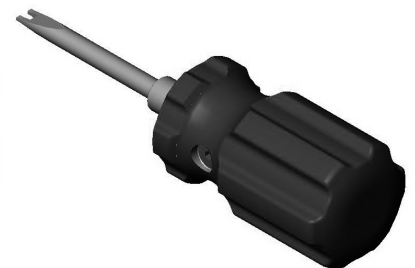
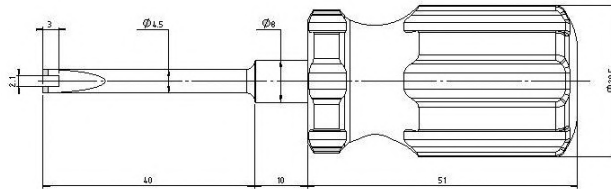
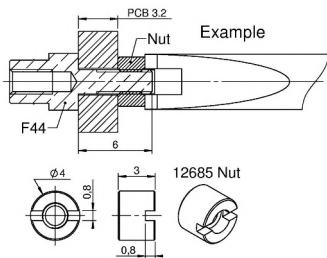
Tools

LATCH SEPARATION TOOL P/N C14790



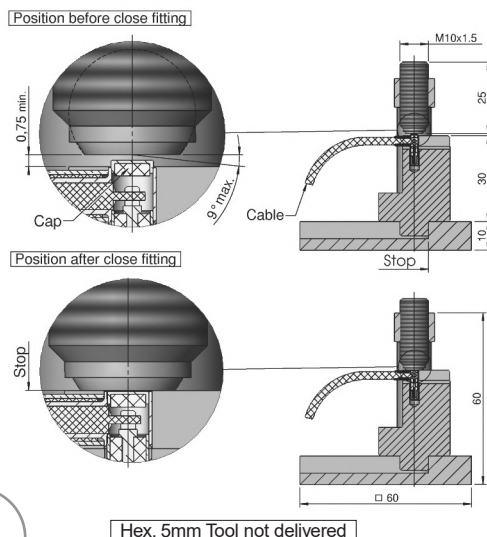
Series	A max.		A min.	
	A max.	LF contacts	A min.	LF contacts
CMM 100	53	25	7	2
CMM 200	53	50	7	4

SCREWDRIVER P/N C14743 FOR NUT P/N 12685

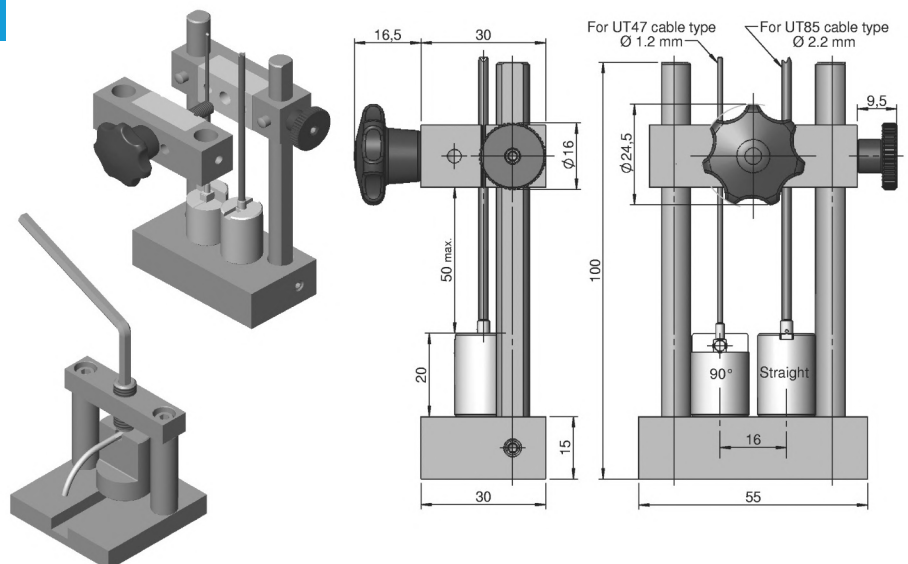


Optional : dynamometric screwdriver specifically designed for low torques (includes bits & adjusting key).

MOUNTING OF C14772 BACK CAPS



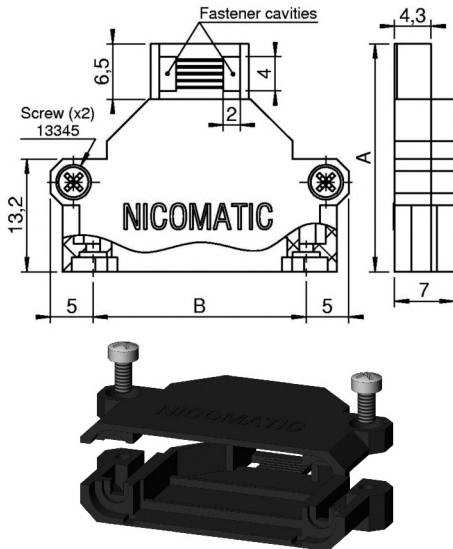
SUCOFLEX SOLDER TOOL P/N C14777



Accessories

STRAIGHT COVER FOR CMM SERIES 220 female P/N CMM-C2-XX (other upon request)

Material : high temp. thermoplastic (-55°C to +200°C)



Length B in mm
(distance between fixing hardware axes)

CMM-C2-XX

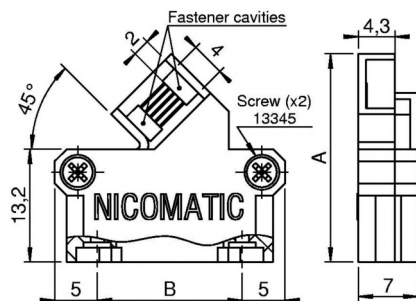
CMM 220 series

Reference	Length B	Length A	Screw (x2)
CMM-C2-11	11 mm	23,7 mm	Included
CMM-C2-15	15 mm	23,7 mm	
CMM-C2-17	17 mm	17,2 mm	
CMM-C2-25	25 mm	26,7 mm	
CMM-C2-27	27 mm	26,7 mm	
CMM-C2-31	31 mm	29,7 mm	
CMM-C2-39	39 mm	29,7 mm	
CMM-C2-45	45 mm	33,7 mm	
CMM-C2-47	47 mm	33,7 mm	
CMM-C2-49	49 mm	33,7 mm	
CMM-C2-53	53 mm	33,7 mm	
CMM-C2-55	55 mm	33,7 mm	

Note: M18 fixings are not included with the cover

45° COVER FOR CMM SERIES 220 female P/N CMM-C2-XX-45 (upon request)

Material : high temp. thermoplastic (-55°C to +200°C)



Length B in mm
(distance between fixing hardware axes)

CMM-C2-XX-45

CMM 220 series

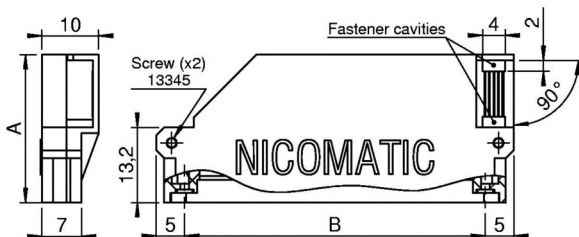
45 for exit 45°

Reference	Length B	Length A	Screw (x2)
CMM-C2-17-45	17 mm	24,4 mm	Included

CMM220 female M18 fixing not included with cover

90° COVER FOR CMM SERIES 220 female P/N CMM-C2-XX-90 (upon request)

Material : high temp. thermoplastic (-55°C to +200°C)



Length B in mm
(distance between fixing hardware axes)

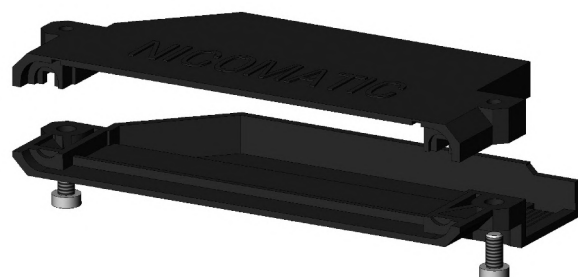
CMM-C2-XX-90

CMM 220 series

90 for exit 90°

Reference	Length B	Length A	Screw (x2)
CMM-C2-53-90	53 mm	26 mm	Included

CMM220 female M18 fixing not included with cover

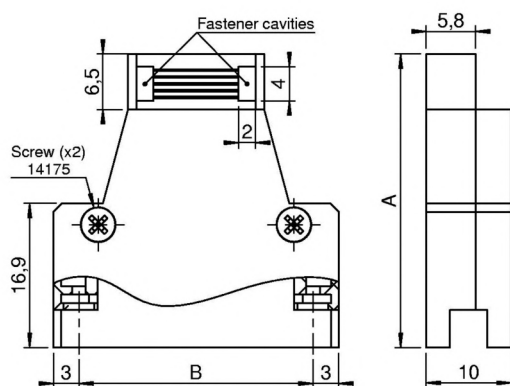


Note: Aluminum covers are available upon request. Contact us.

Accessories

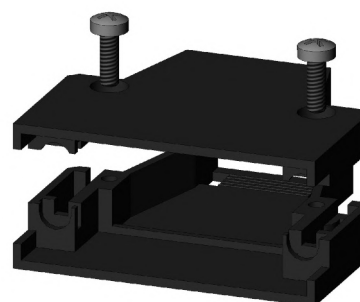
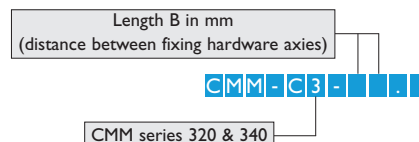
COVERS STRAIGHT FOR CMM SERIES 320 & 340 (male & female) P/N CMM-C3-XX.X

Material : high temp. thermoplastic (-55°C to +200°C)



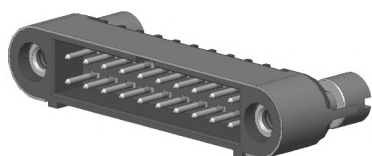
Reference	Length B	Length A	Screw (x2)
CMM-C3-27.5	27,5 mm	34,4 mm	Included
CMM-C3-45.0	45,0 mm	34,4 mm	

For CMM320/340 male & female
M45 or F57 fixing not included with cover



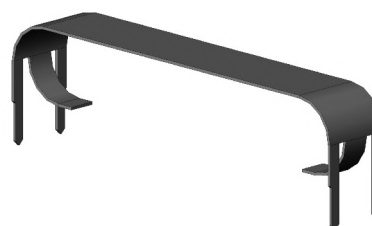
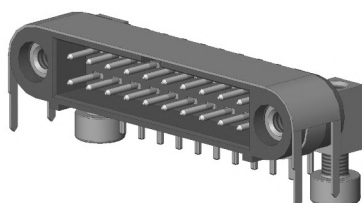
Other upon request

SHIELDING FOR CMM SERIES 220 (male straight on PCB) P/N 12997-XX (upon request)



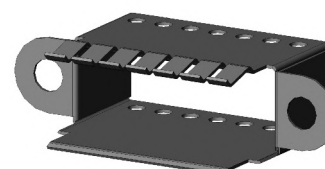
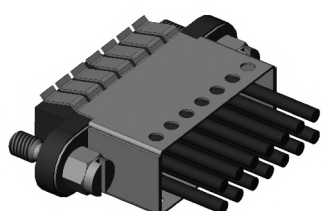
XX = distance between fixing axis B

SHIELDING FOR CMM SERIES 220 (male 90° on PCB) P/N 12998-XX (upon request)



XX = distance between fixing axis B

SHIELDING FOR CMM SERIES 220 (female on cable) P/N C13024-XX (upon request)



XX = distance between fixing axis B

Accessories

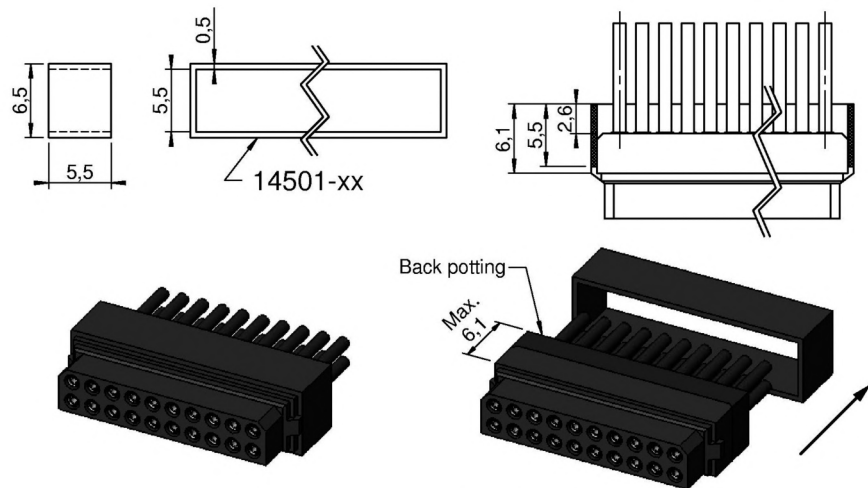
BACKPOTTING SHAPE FOR CMM SERIES 200 (female) P/N 14501-XX

Material : thermoplastic 100°C max.

Reference	Length B
14501-07	min. 7 mm
14501-09	9 mm
14501-11	11 mm
14501-13	13 mm
14501-15	15 mm
14501-17	17 mm
14501-19	19 mm
14501-21	21 mm
14501-23	23 mm
14501-25	25 mm
14501-27	27 mm
14501-29	29 mm
14501-31	31 mm
14501-33	33 mm
14501-35	35 mm
14501-37	37 mm
14501-39	39 mm
14501-41	41 mm
14501-43	43 mm
14501-45	45 mm
14501-47	47 mm
14501-49	49 mm
14501-51	51 mm
14501-53	max. 53 mm

14501-xx (xx = length B in mm)

Example with B=23mm : Ref = 14501-23



Remove shape after back potting

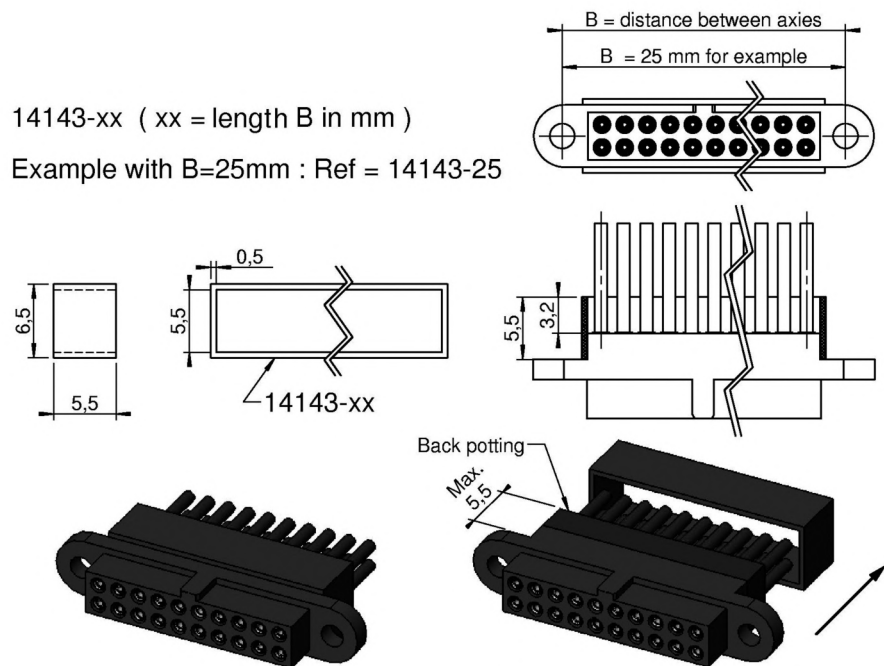
BACKPOTTING SHAPE FOR CMM SERIES 220 (male & female) P/N 14143-XX

Material : thermoplastic 100°C max.

Reference	Length B
14143-09	min. 9 mm
14143-11	11 mm
14143-13	13 mm
14143-15	15 mm
14143-17	17 mm
14143-19	19 mm
14143-21	21 mm
14143-23	23 mm
14143-25	25 mm
14143-27	27 mm
14143-29	29 mm
14143-31	31 mm
14143-33	33 mm
14143-35	35 mm
14143-37	37 mm
14143-39	39 mm
14143-41	41 mm
14143-43	43 mm
14143-45	45 mm
14143-47	47 mm
14143-49	49 mm
14143-51	51 mm
14143-53	53 mm
14143-55	55 mm
14143-57	57 mm
14143-59	59 mm
14143-61	61 mm
14143-63	63 mm
14143-65	max. 65 mm

14143-xx (xx = length B in mm)

Example with B=25mm : Ref = 14143-25



Remove shape after back potting

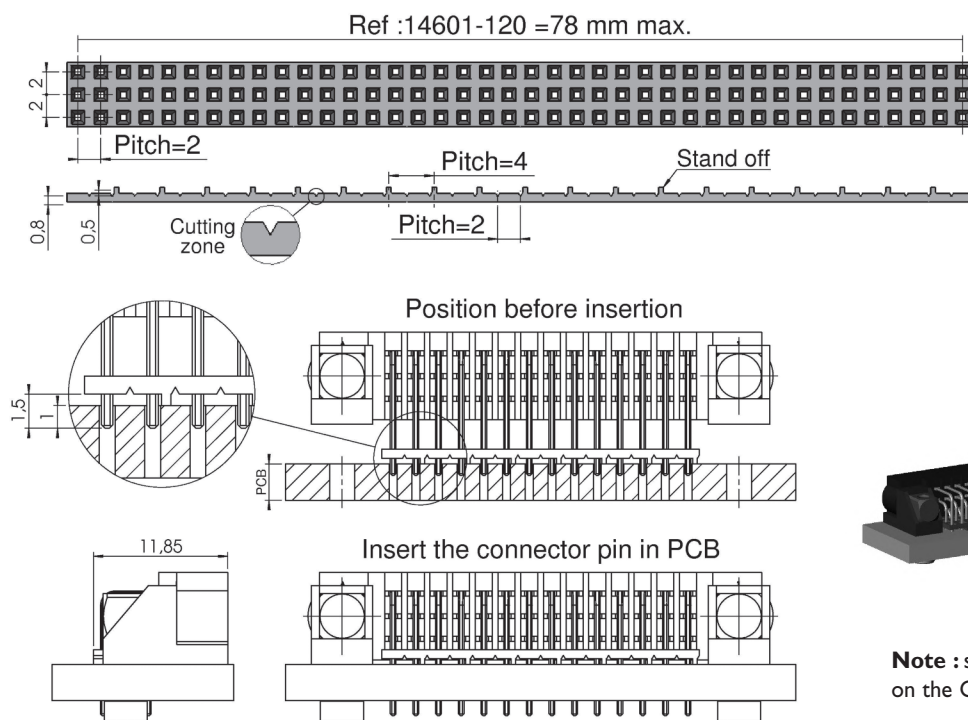
Note: Special housing with integrated backpotting available upon request.



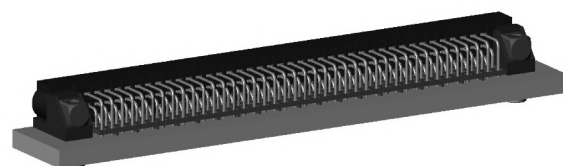
Accessories

CONTACTS ALIGNMENT PLATE P/N 14601-120

Material : high temperature thermoplastic (-55°C to +200°C)



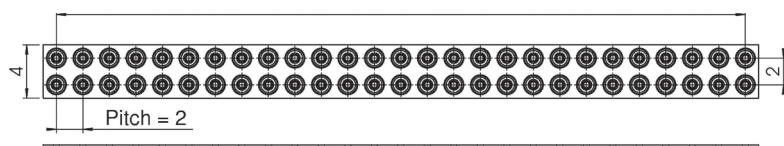
Divisible



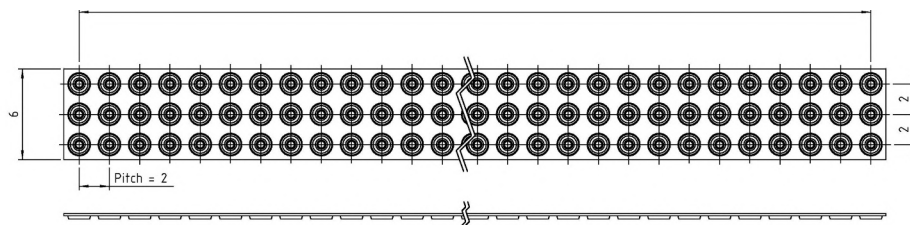
Note : systematically delivered and mounted on the CMM 320 series "right angle" (V and VL types)

SILICON INTERFACIAL SEAL (for male connector except S-C types)

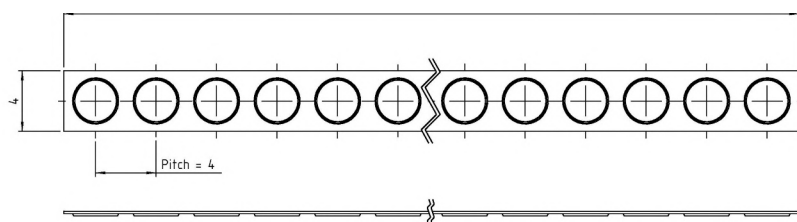
LF 220 series P/N 14599-54 = 52 mm max.



LF 320 series P/N 14980-120 = 78 mm max.



Special contacts 220 series P/N 16053-15 = 60,2 mm max.

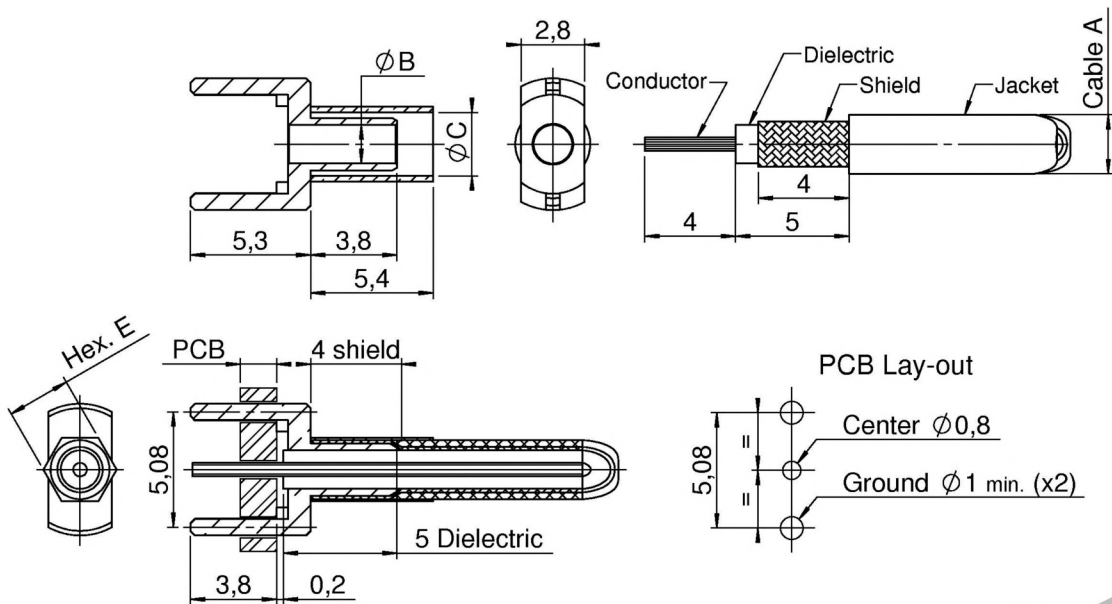


Mix-layout on request

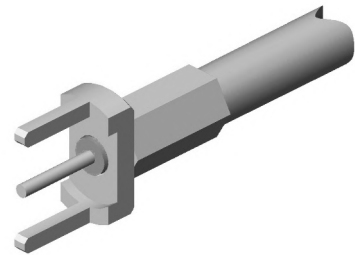
Accessories

COAX CABLE CRIMP TERMINATION

(straight for cables Ø 2 and Ø 2,7)

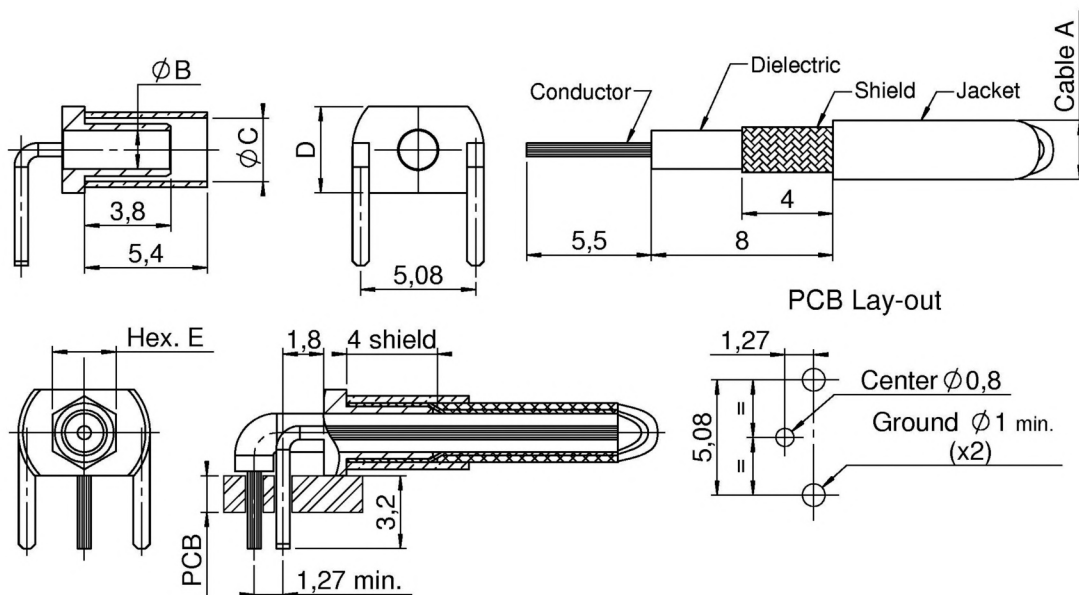


	CI4759	CI4760
Cable A	Ø 2	Ø 2,7
Ø B	1 mm	1,7 mm
Ø C	2,2 mm	2,8 mm
Hex. E	2,4 on flat	2,8 on flat

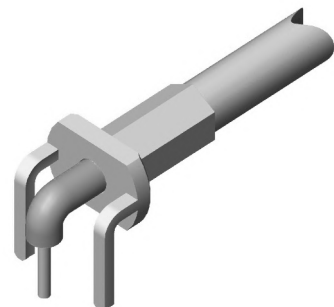


COAX CABLE CRIMP TERMINATION

(90° for cables Ø 2 and Ø 2,7)



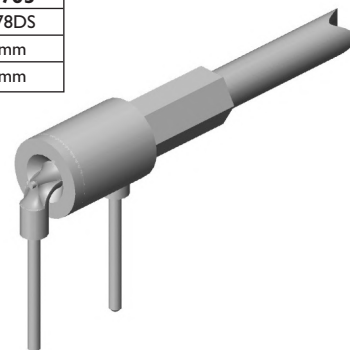
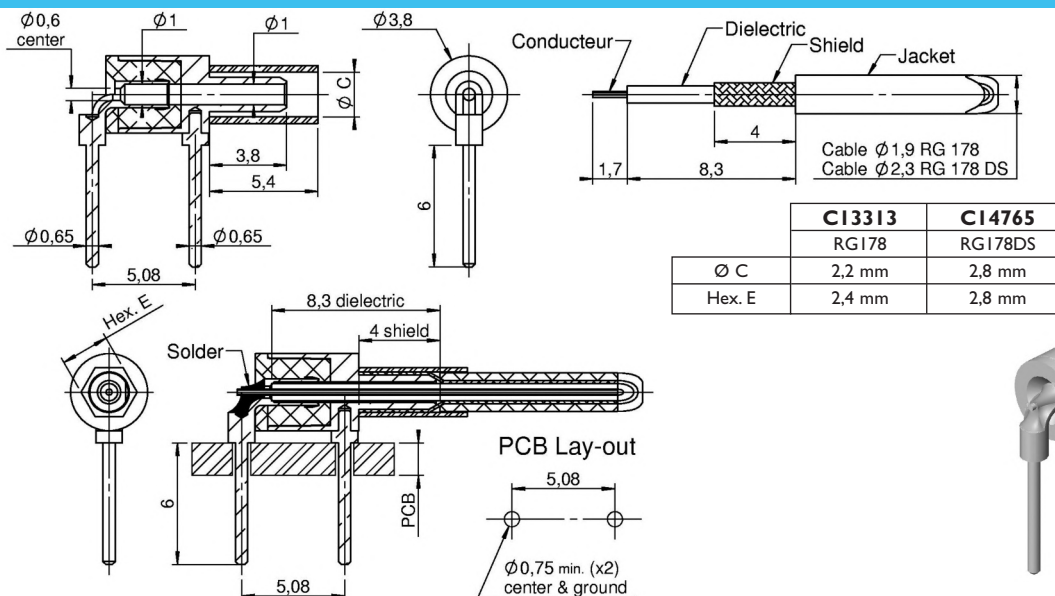
	CI4761	CI4762
Cable A	Ø 2	Ø 2,7
Ø B	1 mm	1,7 mm
Ø C	2,2 mm	2,8 mm
Length D	3,4 mm	3,8 mm
Hex. E	2,4 on flat	2,8 on flat



Accessories

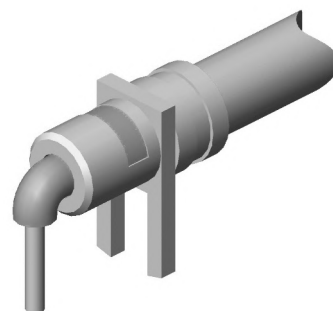
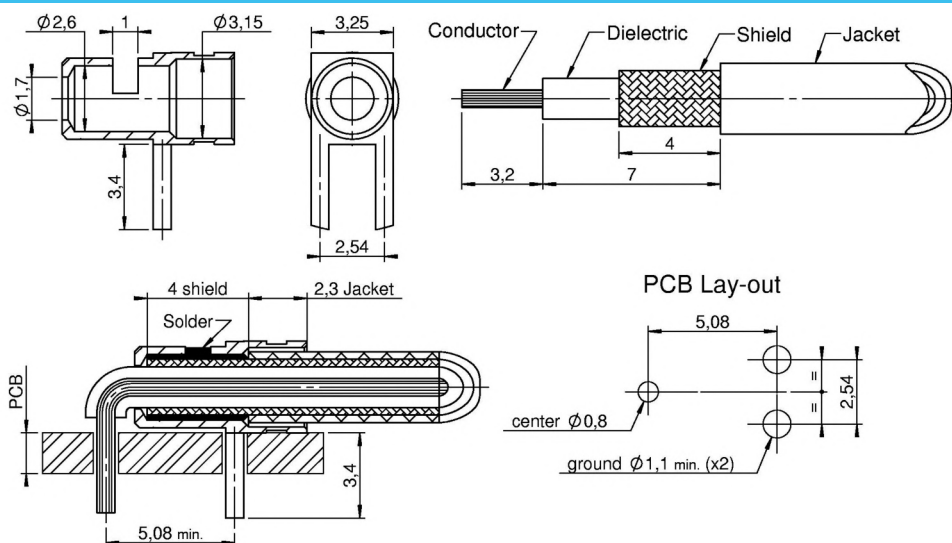
COAX CABLE CRIMP TERMINATION

P/N C13313 for RG 178 and P/N C14765 for RG 178 DS



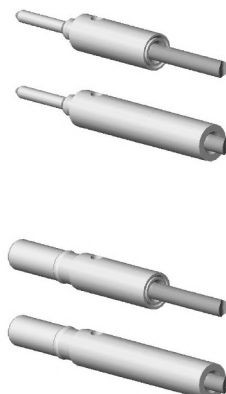
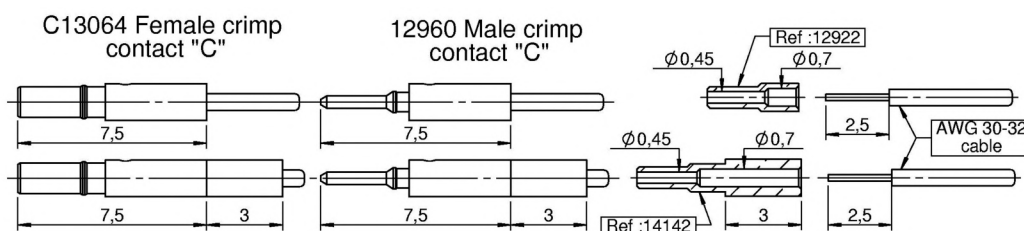
COAX CABLE CRIMP TERMINATION

P/N C12780 for cables RG 316



CRIMP GAUGE REDUCER

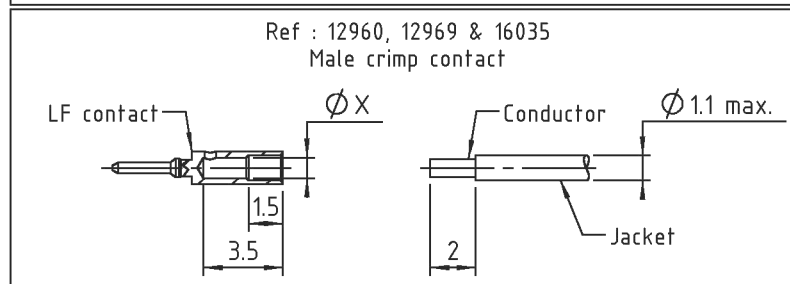
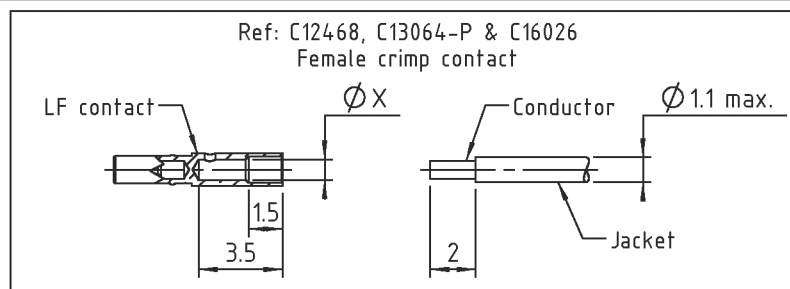
for awg 30-32 for LF contacts P/N 12922 & 14142



Gender	Contact "C"	Reducer	Tool	Positioner	Position 1st crimp	Position 2nd crimp
Male	I2960	I2922	MH800	K1692	Contact + reducer + cable position "4"	
Female	C13064-P					
Male	I2960	I4142	MH800	K1692	Reducer + cable position "8"	(Reducer & cable) + contact position "4"
Female	C13064-P					

Cable instructions (ICLF01)

Diameter X	
Reference	X
12969	0.7
16035	
C12468	
C16026	
12960	0.9
C13064-P	



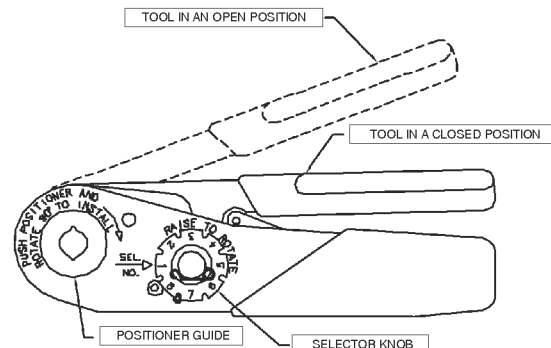
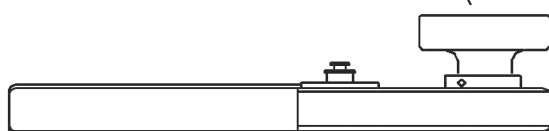
Crimp barrel accommodation					
Contact		Wire size (AWG)	Tool		
Reference	Type		Hand crimp tool reference	Positionner	Crimp tool setting
12960	Male C	22	DANIELS MH800	K1692	6
12969	Male S	24			7
16035	Male S	26 & 28			6
C13064-P	Female C	22			6
C12468	Female S	24			7
C16026	Female S	26 & 28			6
C12468	Female S	26 & 28			6
C16026	Female S	26 & 28			6

1 - Set the Hand crimp tool according to Crimp barrel accommodation table above

1.1 - Select the crimp tool setting with the selector knob.

1.2 - Put the Positionner K1692 in the positionner guide.

Put the positionner K1692
in the positionner guide



2 - Check the wire stripping

2.1 - Insert the Wire in the contact

2.2 - The conductor must be visible through the inspection window of the contact

Inspection window



3 - Insert the contact and Wire assembly in the crimp guide of the hand crimp tool

3.1 - In the crimp guide, the contact and Wire assembly must be in the end stop position

3.2 - During the crimping, keep the wire in position

3.3 - Just one crimping operation is allowed per contact and wire assembly

4 - Visually check the crimping

4.1 - The crimping must not deform the inspection window

4.2 - The contact must not have visible fractures or cracks

4.3 - The contact barrel must not be deformed or bent

5 - Check the contact is firmly crimped, by pulling gently

5.1 - For that purpose two (2) fingers are enough : pinch the wire and pull smoothly along the axis of the crimped contact.

Cable instructions

HF CONTACTS					CONNECTION MODE			
Supplier	P/N	Ø Cable	Series	Gender	Ref. contact	Central contact	Shield	Impedance
SPECIAL Nexans (Axon *)	50VMTX (SM 50 *)	1,2 mm	HF30	Male	30-1312-ZS-01	Solder	Crimped Hex. 1,9 mm	50 Ohm
					(30-1312-ZS-02 *)			
				Female	30-1412-ZS			
					30-2312-ZS-01			
			HF22	Male	(30-2312-ZS-02 *)			
					30-2412-ZS			
				Female	22-1312-ZS-01			
					(22-1312-ZS-02 *)			
	75VMTX (SM 75 *)	1,2 mm	HF30	Male	22-2312-ZS-01	Solder	Crimped Hex. 1,9 mm	75 Ohm
					(22-2312-ZS-02 *)			
				Female	30-1312-ZS-75-01			
					(30-1312-ZS-75-02 *)			
			HF22	Male	30-1412-ZS-75			
					30-2312-ZS-75-01			
				Female	(30-2312-ZS-75-02 *)			
					30-2412-ZS-75			
Axon RG 178 DT	P500955	2,3 mm	HF30	Male	22-1312-ZS-75-01	Solder	Crimped Hex. 1,9 mm	75 Ohm
					(22-1312-ZS-75-02 *)			
				Female	22-2312-ZS-75-01			
					(22-2312-ZS-75-02 *)			
				Male	30-1320-DS	On choice	Crimped Hex. 2,8 mm	50 Ohm
					30-1420-DS	Solder		
				Female	30-2320-DS	On choice		
					30-2420-DS	Solder		
Axon PTFE Cellular	P 812817	2,3 mm	HF30	Male	30-1324-DS	On choice	Crimped Hex. 2,8 mm	50 Ohm
					30-1424-DS	Solder		
				Female	30-2324-DS	On choice		
					30-2424-DS	Solder		
	P 804298 B	2,4 mm	HF30	Male	30-1324-DS-75	On choice	Crimped Hex. 2,8 mm	75 Ohm
					30-1424-DS-75	Solder		
				Female	30-2324-DS-75	On choice		
					30-2424-DS-75	Solder		
Axon RG 316 DT	P0530912	2,7 mm	HF30	Male	30-1326-DS	On choice	Crimped Hex. 3,25 mm	50 Ohm
					30-1426-DS	Solder		
				Female	30-2326-DS	On choice		
					30-2426-DS	Solder		
Axon RG 179 DT	P530268	3 mm	HF30	Male	30-1326-DS-75	On choice	Crimped Hex. 3,25 mm	75 Ohm
					30-1426-DS-75	Solder		
				Female	30-2326-DS-75	On choice		
					30-2426-DS-75	Solder		

DT = DS (Double Shield)

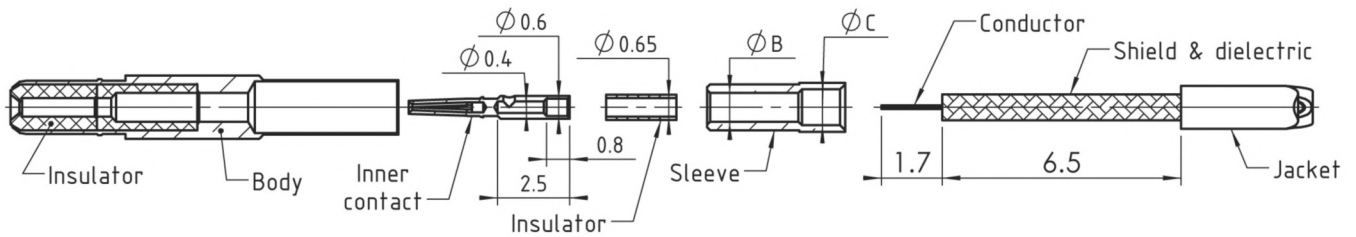
	ØB	ØC	Sleeve
P/N terminal -01 for 50VMTX cable type	1 mm	1,25 mm	
P/N terminal -02 for SM 50 cable type	0,85 mm	1,15 mm	

Cable instructions

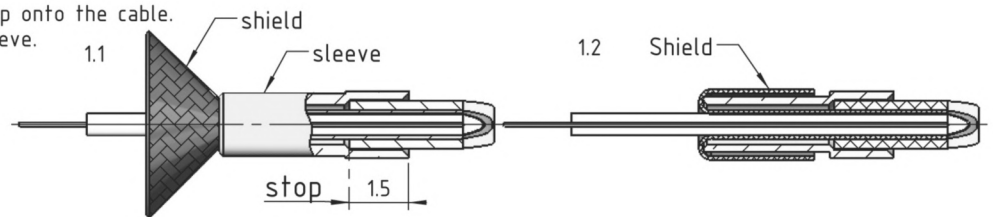
NORMES			HF CONTACTS				CONNECTION MODE		
MIL-C-17	NF C93-550	Ø Cable	Series	Gender	Ref. contact	Central contact	Shield	Impedance	
COAX CABLE	RG 178	KX 21 A	2 mm	HF30	Male	30-1320-SS	Crimped	Crimped Hex. 2,4 mm	50 Ohm
						30-1320-ZS	Solder		
						30-1420-ZS			
					Female	30-2320-SS	Crimped		
						30-2320-ZS	Solder		
						30-2420-ZS			
				HF22	Male	22-1320-ZZ	Solder		
					Female	22-2320-ZZ			
	RG 316	KX 22 A	2,7 mm	HF30	Male	30-1326-SS	Crimped	Crimped Hex. 2,8 mm	50 Ohm
						30-1326-ZS	Solder		
						30-1426-ZS			
					Female	30-2326-SS	Crimped		
						30-2326-ZS	Solder		
						30-2426-ZS			
	RG 174	KX 3 B	2,7 mm	HF30	Male	30-1326-SS	Crimped	Crimped Hex. 2,8 mm	50 Ohm
						30-1326-ZS	Solder		
						30-1426-ZS			
					Female	30-2326-SS	Crimped		
						30-2326-ZS	Solder		
						30-2426-ZS			
	RG 179		2,7 mm	HF30	Male	30-1326-SS-75	Crimped	Crimped Hex. 2,8 mm	75 Ohm
						30-1326-ZS-75	Solder		
						30-1426-ZS-75			
					Female	30-2326-SS-75	Crimped		
						30-2326-ZS-75	Solder		
						30-2426-ZS-75			

			HF CONTACTS			CONNECTION MODE			
Supplier	P/N	Ø Cable	Series	Gender	Ref. contact HF	Central contact	Shield	Impedance	
SEMI-RIGID	UT47	1,2 mm	HF30	Male	30-1347-ZZ	Solder	Solder	50 Ohm	
					30-1447-ZZ				
				Female	30-2347-ZZ				
					30-2447-ZZ				
	(Axon *)	UT85 (QFX 86 SPCW *)	2,2 mm	HF30	Male	30-1385-ZZ	Solder	Solder	50 Ohm
						30-1485-ZZ			
					Female	30-2385-ZZ			
						30-2485-ZZ			

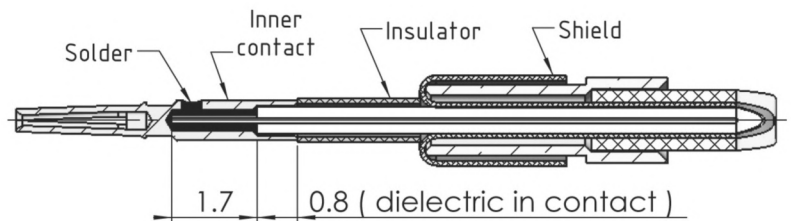
Cable instructions (IC22HF01)



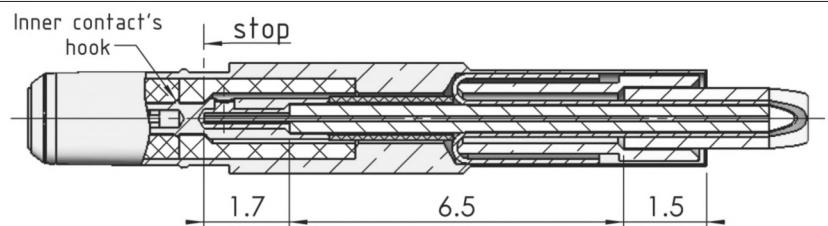
- 1/ 1.1 - Thread the sleeve until stop onto the cable.
1.2 - Place the shield on the sleeve.



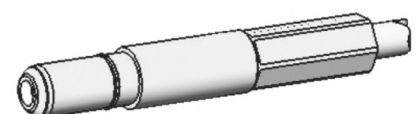
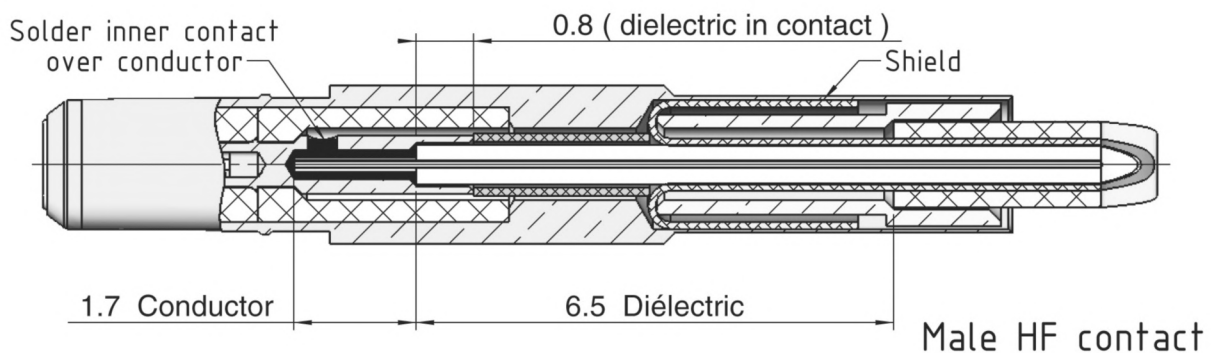
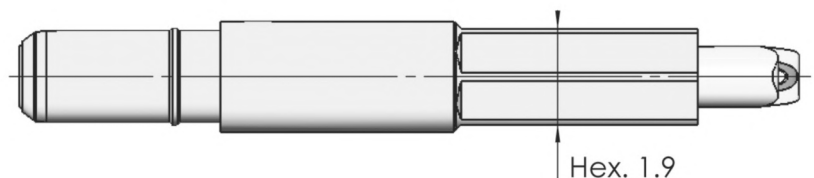
- 2/ - Thread the insulator.
- Solder the inner contact on the conductor.



- 3/ - Thread to the body.
- Beware that the inner contact's hook goes entirely through the body's insulator

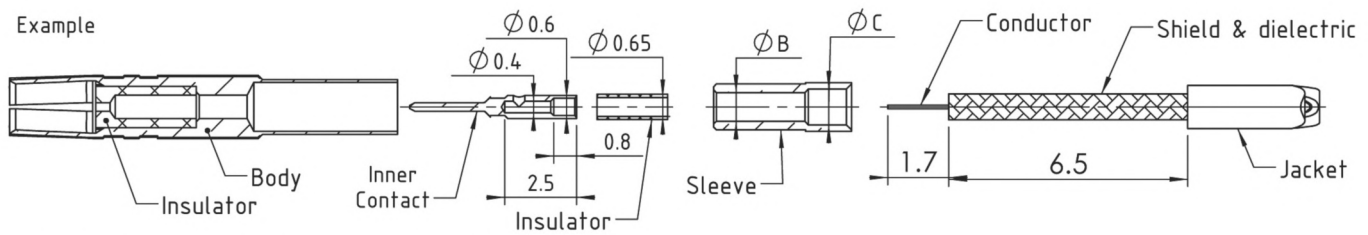


- 4/ CRIMP :
- Tool : DANIELS HX3
- Die : C13847
- Position : 8.95 coax 22
- Hexagone : 1.9mm / plats

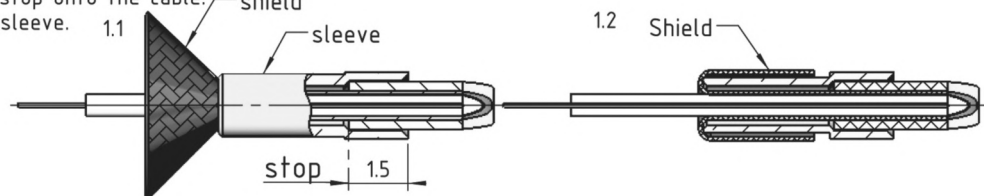


Cable instructions (IC22HF02)

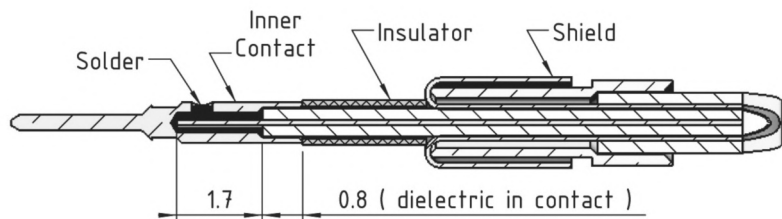
Example



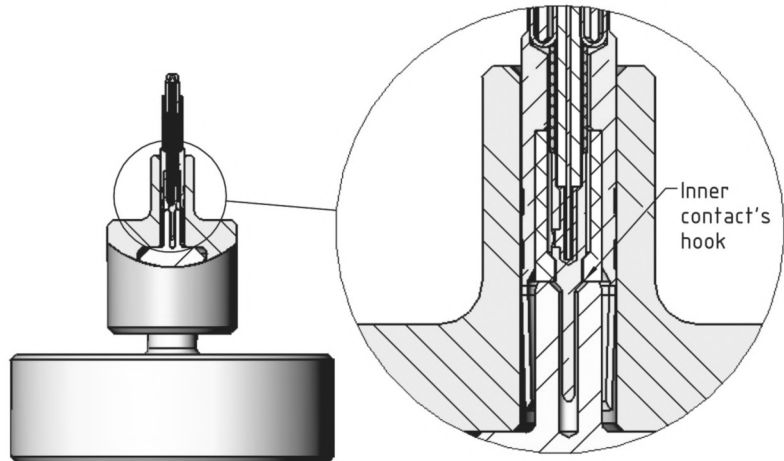
- 1/ 1.1 - Thread the sleeve until stop onto the cable.
1.2 - Place the shield on the sleeve.



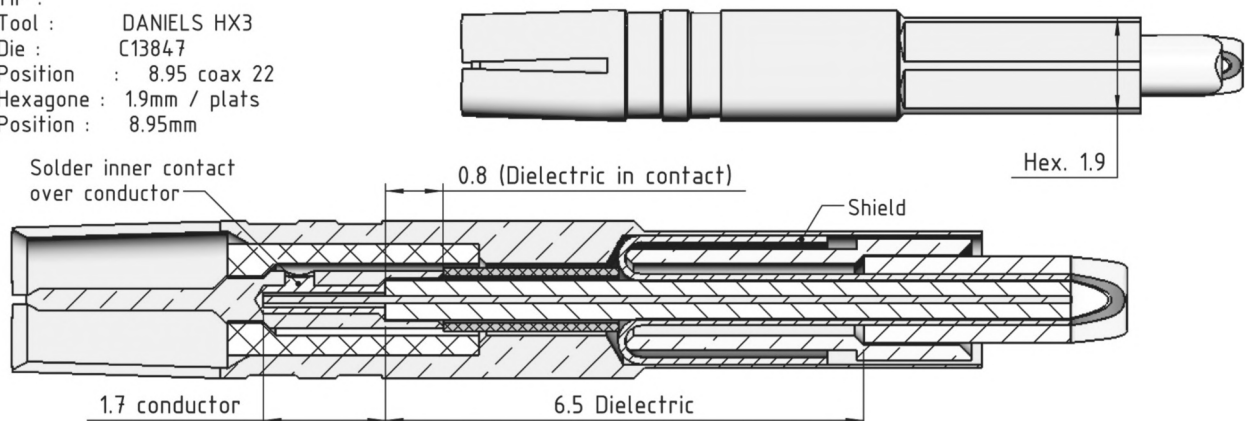
- 2/ - Thread the insulator.
- Solder the inner contact on the conductor.



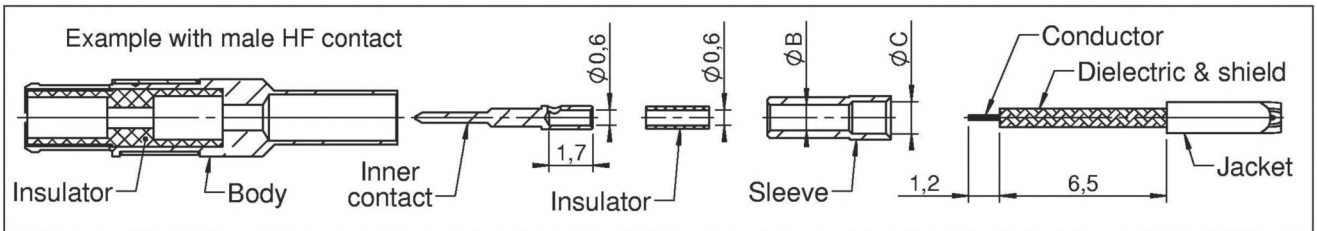
- 3/ - Put the contact body in the tool C16447.
- Thread to the body.
- Beware that the inner contact's hook goes entirely through the body's insulator.



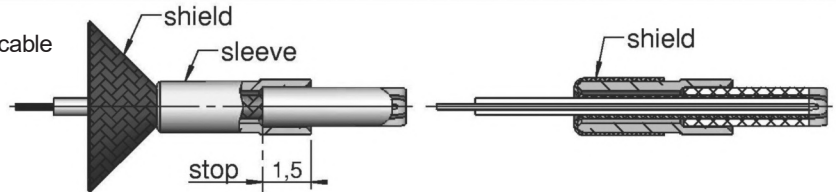
- 4/ CRIMP :
- Tool : DANIELS HX3
 - Die : C13847
 - Position : 8.95 coax 22
 - Hexagone : 1.9mm / plats
 - Position : 8.95mm



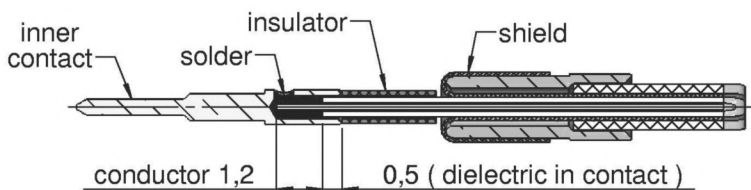
Cable instructions (IC30HF01)



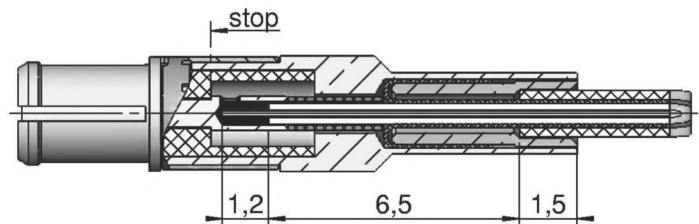
- 1 - Thread the sleeve until stop onto the cable
- Place the shield on the sleeve



- 2 - Thread the insulator
- Solder the inner contact on the conductor

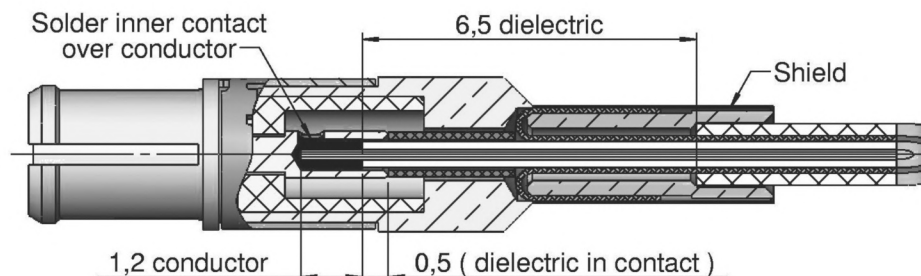
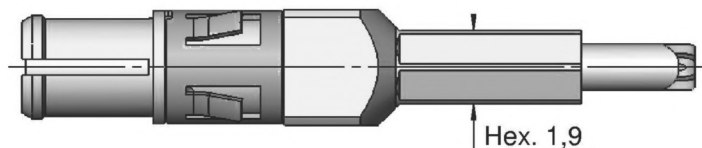


- 3 - Thread to the body.

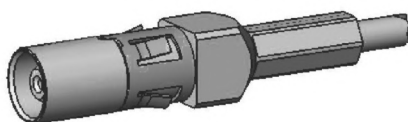


- 4 - CRIMP

- Tool : DANIELS HX3
- Die : C13847
- Hexagone : 1,9 mm / flat
- Position : 9,95 mm

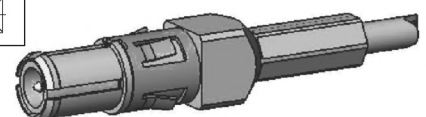


Female HF contact



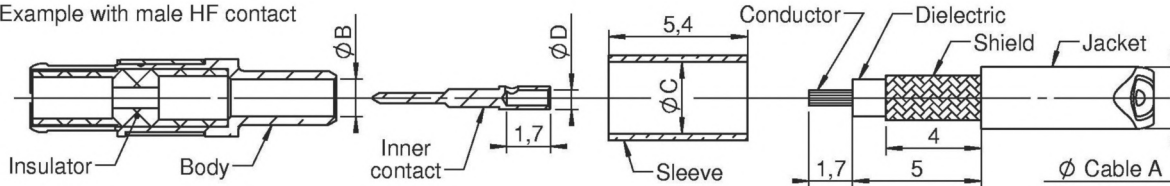
	$\varnothing B$	$\varnothing C$	Sleeve
P/N terminal -01	I	1,25	
P/N terminal -02	0,85	1,15	

Male HF contact



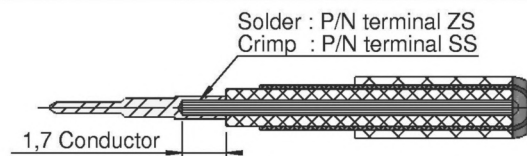
Cable instructions (IC30HF02)

Example with male HF contact

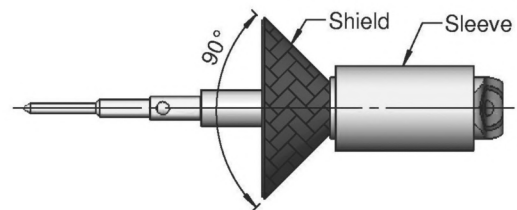


	Cable ØA	Body ØB	Sleeve ØC	Contact ØD	Central crimp DANIELS MH800		Hexagonal imprint E sleeve crimp DANIELS HX3 tool				
					Positioner K1131		Die C13847			Die C14680	
					Conductor Ø 0,3	Conductor Ø 0,5	Hex.1,9	Hex.2,4	Hex.2,8	Hex.3,25	Hex.4
30-x320-SS	2 mm	1 mm	2,2 mm	0,5 mm	Position 2 / 3	Position 3 / 4		x			
30-x320-DS	2,3 mm	1 mm	2,8 mm	0,5 mm					x		
30-x324-SS	2,4 mm	1,5 mm	2,8 mm	0,6 mm					x		
30-x326-SS	2,7 mm	1,7 mm	2,8 mm	0,6 mm					x		
30-x326-DS	3 mm	1,7 mm	3,25 mm	0,6 mm						x	

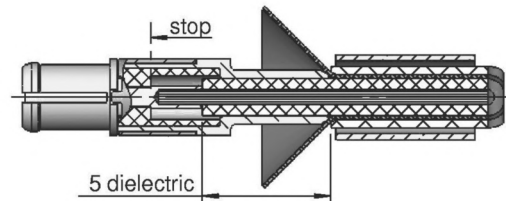
- 1 - Mount the inner contact on the conductor and solder or crimp.
(crimping with DANIELS MH800 positioner K1131)



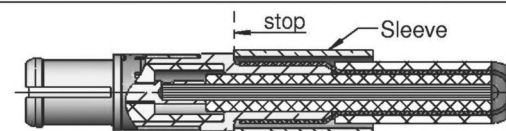
- 2 - Thread the sleeve onto the cable and bent the shield at 90°.



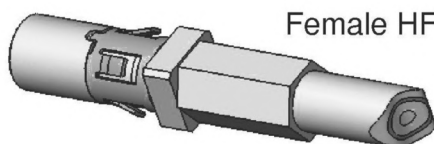
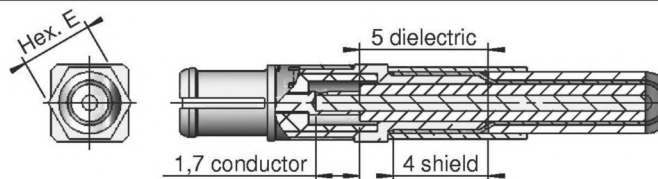
- 3 - Push until stop inside the body.



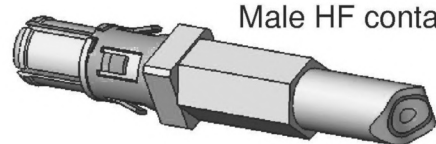
- 4 - Thread the sleeve until stop on the body so as to bent the shield.



- 5 - Crimp the sleeve



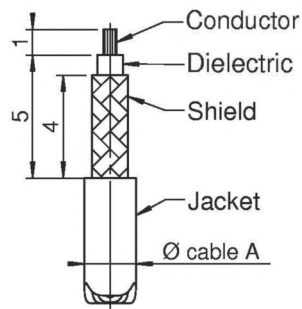
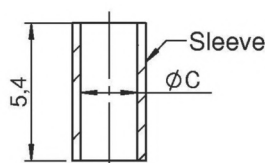
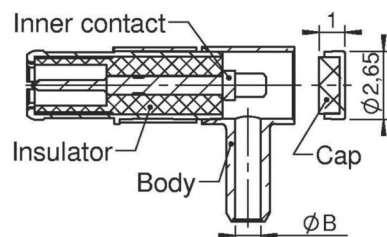
Female HF contact



Male HF contact

Cable instructions (IC30HF03)

Example with male HF contact



1 - Thread the sleeve on cable and bent the shield at 90°

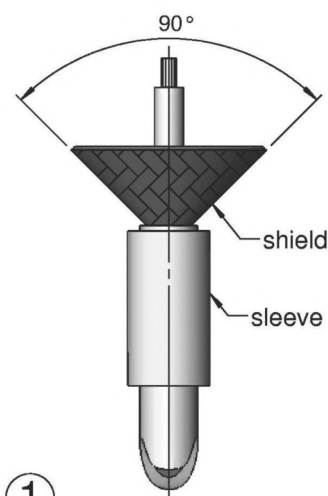
2 - Place the inner contact until stop in the body. Insert the cable and solder the conductor onto the inner contact

3 - Thread the sleeve until stop on the body so as to bent the shield

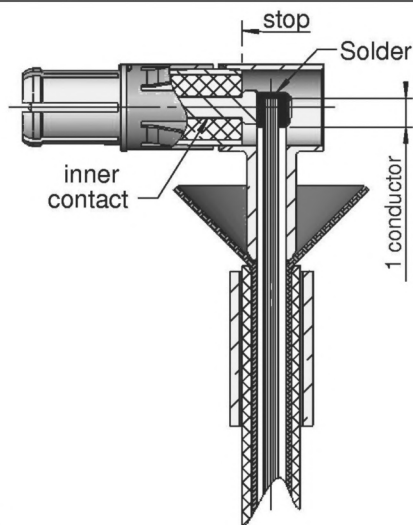
4 - Crimp the sleeve with DANIELS HX3 tool and mount the back cap with tool P/N C14772

Hexagonal imprint E sleeve crimp DANIELS HX3 tool

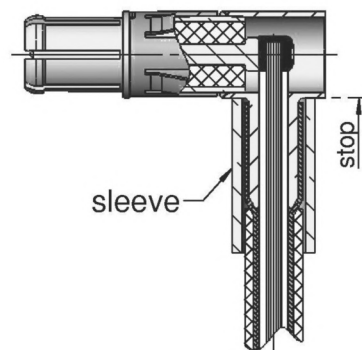
	Cable ØA	Body ØB	Sleeve ØC	Contact	Die C13847			Die C14680	
					Hex.1,9	Hex.2,4	Hex.2,8	Hex.3,25	Hex.4
30-x412-ZS	1,2 mm	0,7 mm	1,3 mm	solder	x				
30-x420-ZS	2 mm	1 mm	2,2 mm	solder		x			
30-x420-DS	2,3 mm	1 mm	2,8 mm	solder			x		
30-x424-ZS	2,4 mm	1,5 mm	2,8 mm	solder			x		
30-x426-ZS	2,7 mm	1,7 mm	2,8 mm	solder			x		
30-x426-DS	3 mm	1,7 mm	3,25 mm	solder				x	



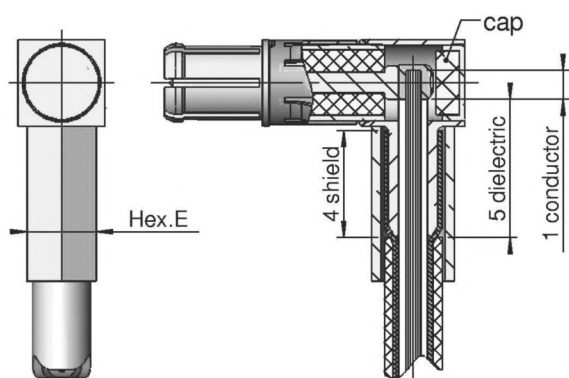
①



②

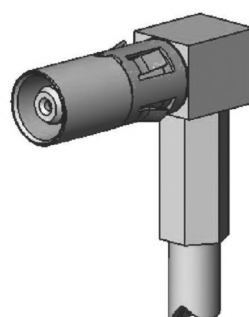


③

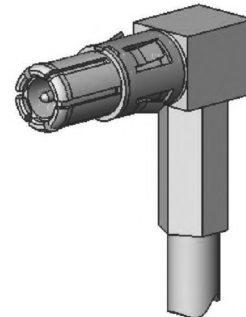


④

Female HF contact

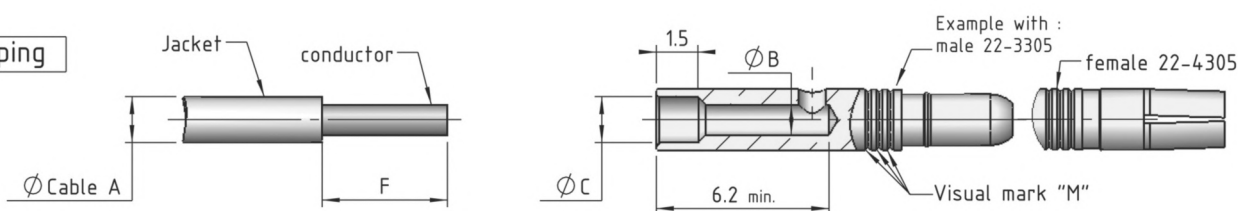


Male HF contact



Cable instructions (IC22HP02)

Stripping



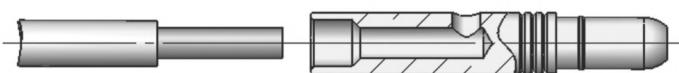
Loaded	Unloaded	Cable A			ØB	ØC	Length F conductor	M	Solder	Crimp by AF8 Tool / Positioner	Crimp tool setting - Number selector		
		AWG20	AWG18	AWG16							AWG20	AWG18	AWG16
3305	22-3305	X	NA		1.1 mm	1.65 mm	4.5 mm	x3	OK	16459 / C16461	4	NA	
3308	22-3308	NA	X	NA	1.35 mm	1.85 mm		x2			NA	5	NA
3310	22-3310		X		1.7 mm	NA	6 mm	x1			4	5	6

Loaded	Unloaded	Cable A			ØB	ØC	Length F conductor	M	Solder	Crimp by AF8 Tool / Positioner	Crimp tool setting - Number selector		
		AWG20	AWG18	AWG16							AWG20	AWG18	AWG16
4305	22-4305	X	NA		1.1 mm	1.65 mm	4.5 mm	x3	OK	16459 / C16461	4	NA	
4308	22-4308	NA	X	NA	1.35 mm	1.85 mm		x2			NA	5	NA
4310	22-4310		X		1.7 mm	NA	6 mm	x1			4	5	6

NA : Not Applicable

The conductor must be visible through the inspection window of the contact

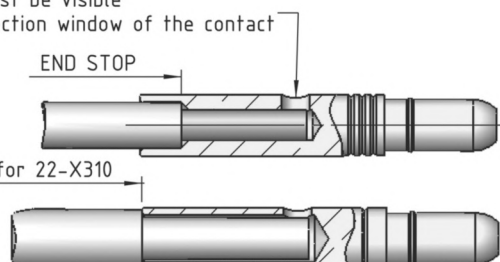
- 1 - Insert the cable into the contact



- 2 - Set the hand crimp tool according to crimp barrel accommodation table above.

- 2.1 - Select the number selector with the selector knob (see crimp tool setting).
- 2.2 - Put the positioner C16461 on the hand crimp tool 16459.

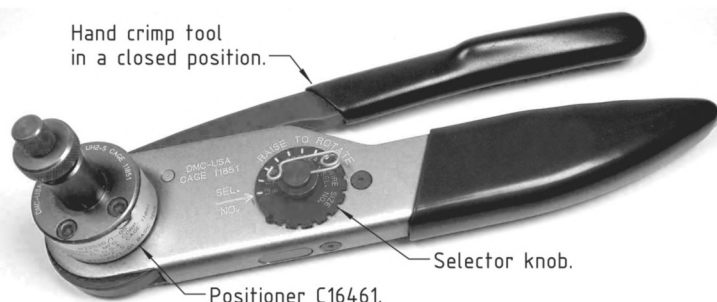
END STOP only for 22-X310



- 3 - Insert the contact and wire assembly in the crimp guide of the hand crimp tool.

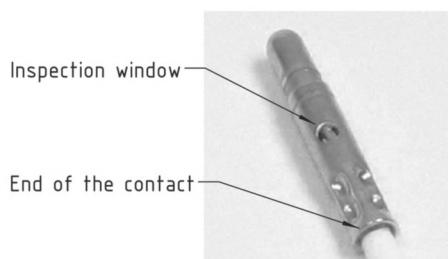
- 3.1 - In the crimp guide, the contact and wire assembly must be in the ends stop position.
- 3.2 - During crimping, keep the wire in position.
- 3.3 - Just one crimping operation is allowed per contact and wire assembly.

Hand crimp tool in a closed position.



- 4 - Visually check crimping

- 4.1 - Crimping must not deform the inspection window.
- 4.2 - Contact must not have visible fractures or cracks.
- 4.3 - Contact barrel must not be deformed or bent.
- 4.4 - Crimping must not deform the end of the contact.



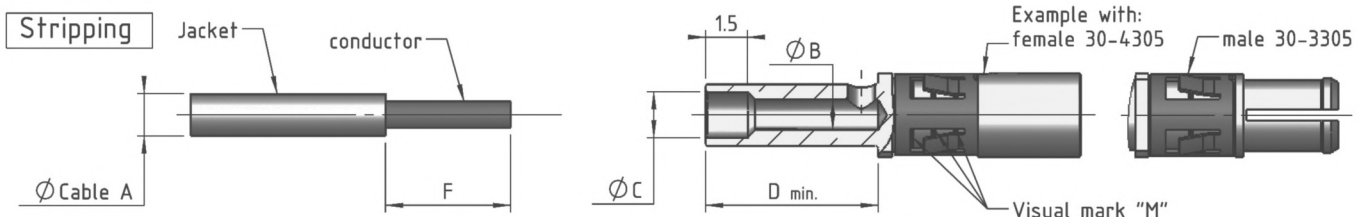
Hand crimp tool in an open position.



- 5 - Check it is firmly crimped by pulling gently

- 5.1 - For that purpose two (2) fingers are enough : pinch the wire and pull smoothly along the axis of the crimped contact

Cable instructions (IC30HP02)



Loaded	Unloaded	Cable A					ØB	ØC	Length F conductor	Length D hole	M	Solder	Crimp by AF8 Tool / Positioner	Crimp tool setting - Number selector				
		AWG20	AWG18	AWG16	AWG14	AWG12								AWG20	AWG18	AWG16	AWG14	AWG12
3305	30-3305	X			NA		1.1 mm	1.65 mm	4.5 mm		x3	OK	16459 / C16460	3			NA	
3308	30-3308	NA	X		NA		1.35 mm	1.85 mm		6.2 mm	x2			NA	4		NA	
3310	30-3310		X		NA		1.7 mm		6 mm		x1			4	4	5	NA	
3315	30-3315				X	NA	2 mm	NA			NA						6	NA
3320	30-3320				NA	X	2.6 mm		5.3 mm	5.5 mm							NA	8

Loaded	Unloaded	Cable A					ØB	ØC	Length F conductor	Length D hole	M	Solder	Crimp by AF8 Tool / Positioner	Crimp tool setting - Number selector				
		AWG20	AWG18	AWG16	AWG14	AWG12								AWG20	AWG18	AWG16	AWG14	AWG12
4305	30-4305	X			NA		1.1 mm	1.65 mm	4.5 mm		x3	OK	16459 / C16460	3			NA	
4308	30-4308	NA	X		NA		1.35 mm	1.85 mm		6.2 mm	x2			NA	4		NA	
4310	30-4310		X		NA		1.7 mm		6 mm		x1			4	4	5	NA	
4315	30-4315				X	NA	2 mm	NA			NA						6	NA
4320	30-4320				NA	X	2.6 mm		5.3 mm	5.5 mm							NA	8

NA : Not Applicable

1 - Insert the cable into the contact

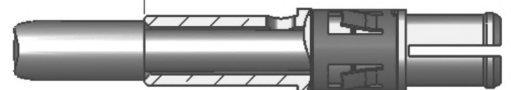


END STOP only for 30-X310, 30-X315 and 30-X320

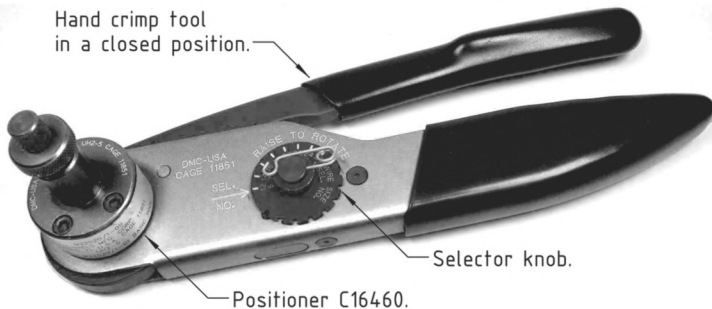
2 - Set the hand crimp tool according to crimp barrel accommodation table above.

2.1 - Select the selector number with the selector knob (see crimp tool setting).

2.2 - Put the positioner C16460 on the hand crimp tool 16459.



Hand crimp tool in a closed position.

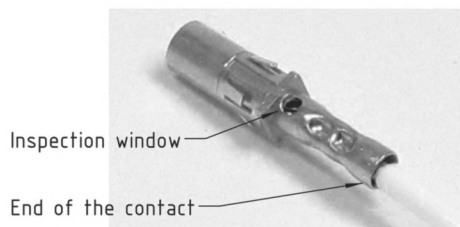


3 - Insert the contact and wire assembly in the crimp guide of the hand crimp tool.

- 3.1 - In the crimp guide, the contact and wire assembly must be in the end stop position.
- 3.2 - During crimping, keep the wire in position.
- 3.3 - Just one crimping operation is allowed per contact and wire assembly.

4 - visually check crimping

- 4.1 - Crimping must not deform the inspection window.
- 4.2 - Contact must not have visible fractures or cracks.
- 4.3 - Contact barrel must not be deformed or bent.
- 4.4 - Crimping must not deform the end of the contact



5 - Check it is firmly crimped by pulling gently

For that purpose two (2) fingers are enough : pinch the wire and pull smoothly along the axis of the crimped contact

Hand crimp tool in an open position.



Crimp guide.

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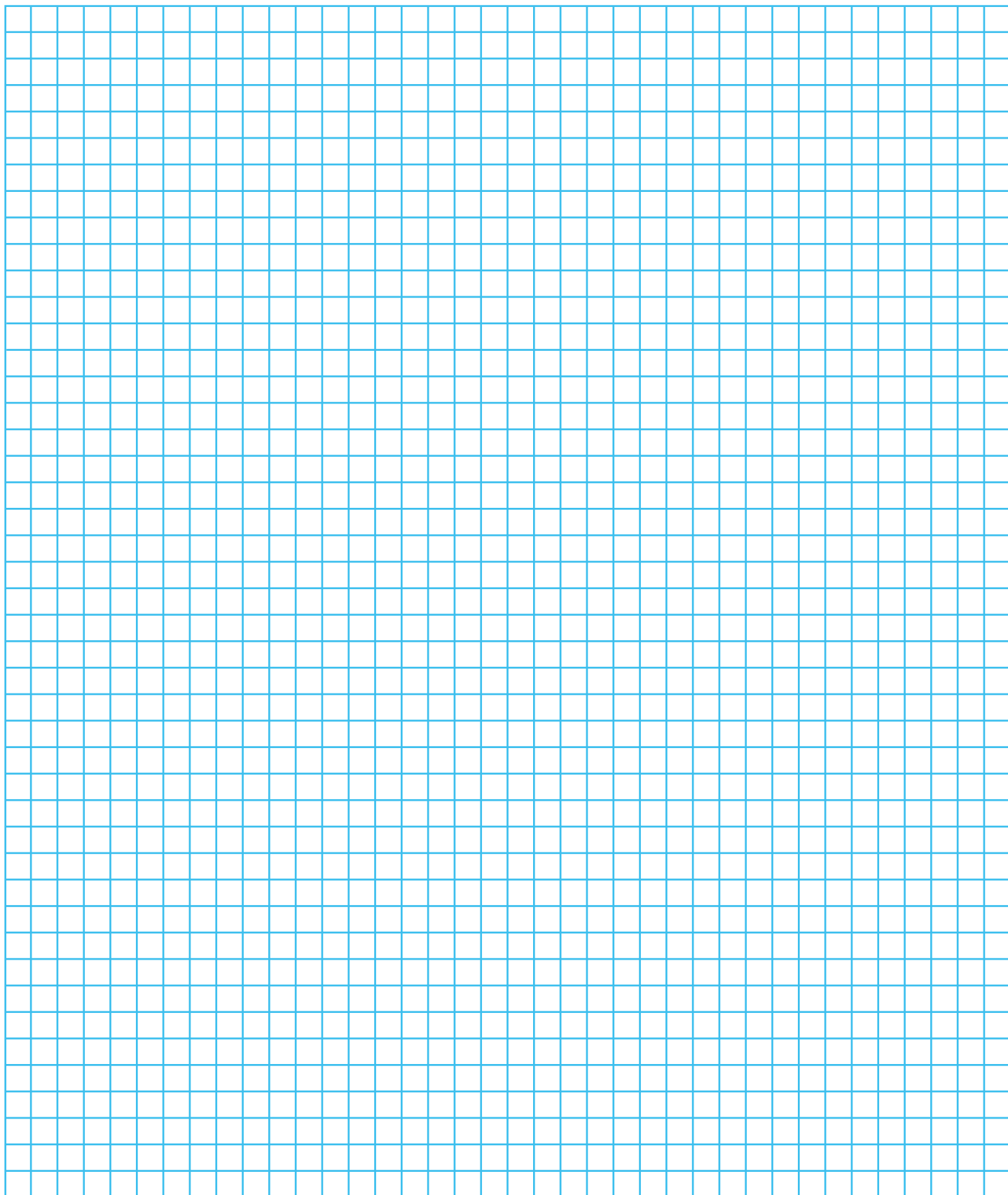
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Notes

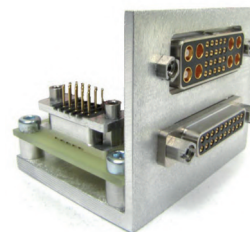


Manufacturer and designer of innovative interconnect solutions



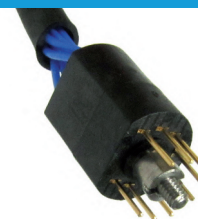
MICRO-D MIX™ DMM SERIES MICRO-CONNECTORS

2mm pitch high density robust metal shielded micro connector
Self cabling connector
Simple and easy to design-in
New alternative under MIL-DTL-83513G or MIL-DTL-55302F test routine
Very flexible custom design (fixing hardware, contacts...)



OMM SERIES MICRO-CIRCULAR CONNECTORS

High density of contacts in smallest circular connector shape
Space saving feature
Security of connection
Light weight
Lockable captive fixing hardware



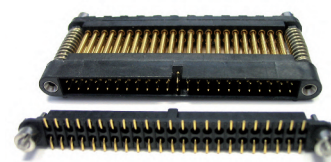
MICROFLEX HARNESS SOLUTION

Low weight: save up to -30% vs. bulky cable
Smaller space-factor
2 in 1 technology with CMM & CRIMPFLEX
Avionic & aerospace MIL comply
High quality of crimp (gaz tie)
High productivity: 2 to 30 contacts in 1 crimp



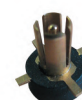
4D-FLOATING CONNECTORS

4D tolerance absorption: 4D = 3 axial movements + 1 rotation
High efficiency "Bone design" (round shape and 4 spring-lips contact)
Complies with MIL-DTL-55302F
Auto alignment feature
Adaptable to customer requests



CUSTOM PRODUCTS

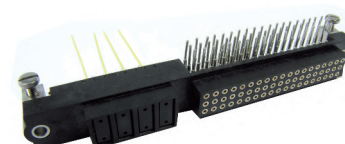
You can rely on our R&D department know-how and long experience.
Our permanent innovation was recognized and labeled as "highly Innovative" by the European Union
Our in-house production and assembly capacity offers you the possibility to create customized products : stamping and moulding, micro-screw machining, laser cut, CNC, specific machinery development, clean room, measure and test lab.
Fully integrated industrial company, Nicomatic can reduce your risks, can secure your development and achieve the solution that will make the difference on the market.



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NICOMATIC maintains a policy of ongoing development and improvement. It therefore reserves the right to change design, dimensions and specifications without notice. All information stated inside this catalogue is not contractual and subject to change (eg. standard connector configurations).

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