



MICROFLEX

MIL-55302F PERFORMANCES

HI-REL
FLEXIBLE

HARNESS



HARSH
ENVIRONMENT

2mm
pitch

→ INTRODUCTION

MICROFLEX

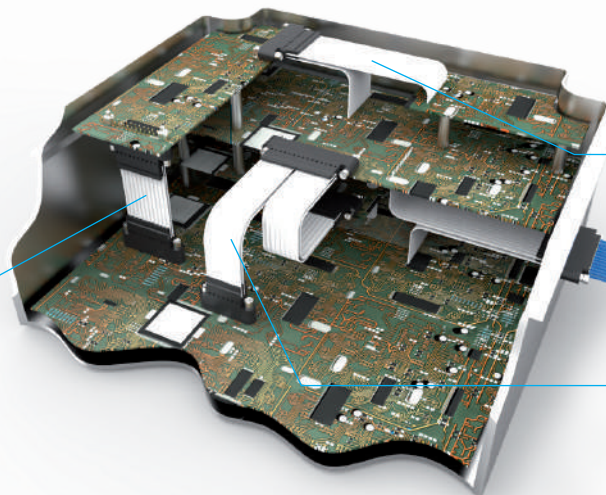
MICROFLEX jumpers suit applications where space & weight savings are critical. The use of screw fixings provides **strong mechanical resistance** for use in **high vibration environments** such as: equipment in medical, aircraft control, in-flight entertainment, electrical power systems, optronics, multi function displays.

NICOMATIC PROVIDES AN ALTERNATIVE TO CLASSIC ROUND CABLES

- 2mm pitch
- 2 rows, from 04 to 60 signal contacts
- Board to board, board to cable, cable to cable versions
- 3A contacts

Configuration examples

MICROFLEX Female-female



MICROFLEX Solderpin Solderpin - female

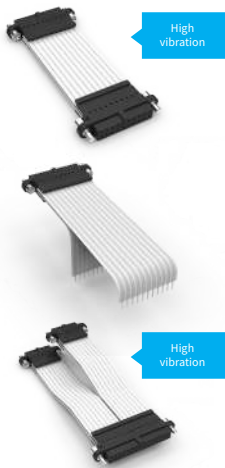
CMM 220 Mating with

MICROFLEX OCTOPUS Multibranches

[CHECK VIDEO ONLINE](#)

MAIN BENEFITS

- **Weight & space saving:** saves up to 60% vs round cables
- **Flexibility and high life expectancy:** 10 000 000 cycles (polyester cable)
- **Reliability:** Vibration resistance according to MIL DTL 55302F
- **Easy to order:** all-in-one product simplifies ordering
- **Easy to design-in:** wide range with all housing sizes from 04 to 60 contacts, polyester or polyimide material, shielding option, numerous fixings



MICROFLEX FEMALE - FEMALE

- Screw fixing on both ends
- Up to 20 gn vibration resistance
- Disconnectable on both sides

MICROFLEX SOLDERPIN FEMALE

- Different length on each branch
- Panel mount option
- Numerous fixing hardware options

MICROFLEX "OCTOPUS"

- From 02 to 10 branches
- Different lengths on each branch
- Any number of pins for each termination



MATING WITH CMM 220 series



More options ?
Download the interactive pdf:
www.nicomatic.com/dl/microflex.pdf

→ TECHNICAL DATA ACCORDING TO MIL-DTL-55302F

MATERIAL

- Contact : Phosphor bronze
- Housing : Special PPS (Polyphenylene Sulfide Fiberglass filled thermoplastic) UL 94-V0
- Cable :
 - White polyester (classified UL VW-1)
 - Polyimide (kapton)
- Stainless steel jackscrew fixing hardware

PLATING

- Contact code F3 : Selective gold plated (Ni 1 to 2µ + Sn pur 3 to 5µ + Au 0.75µ)

MECHANICAL

- Max. mating force per contact : 2 N
- Min. unmating force per contact : 0.2 N
- Crimp tensile strength : 15 N
- Retention force into using : 20 N
- Mechanical operations : 500 cycles

ELECTRICAL

- Minimum breakdown voltage : 1000 Vrms
- Proof voltage : 750 Vrms
- Working voltage : 250 Vrms
- Current : 3 A max . @ 25°C
- Contact resistance : 15 mOhms max.
- Insulation resistance : >300 GOhms

THERMAL

- Operating temperature:
 - Female-female
 - 55°C to +105°C for Polyester cable
 - 55°C to +125°C for Polyimide cable
 - Solderpin-female
 - 40°C to +105°C for Polyester cable
 - 40°C to +125°C for Polyimide cable

According to the test routines other than MIL, our technical features reach higher performances. Please contact technic@nicomatic.fr for more information.
 For eg:
 Up to 20 g_n (Female - Female & Octopus)
 Up to 2500 cycles

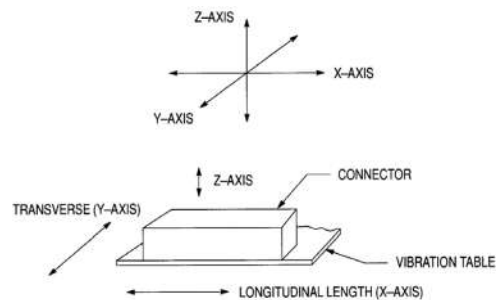
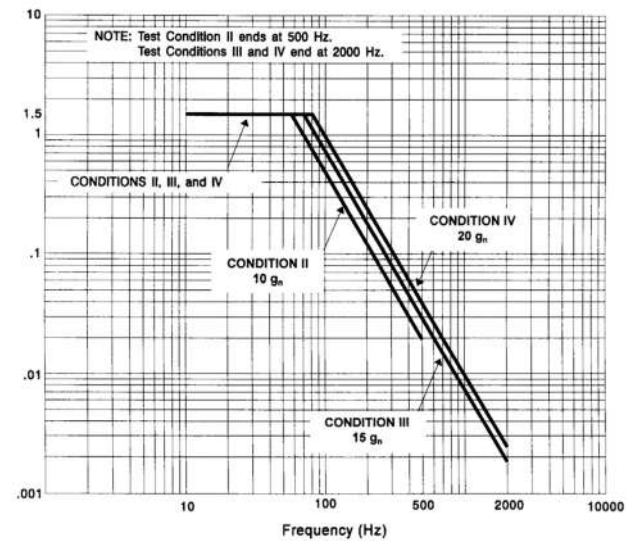
Other option upon request:
 Shielding, high temperature, material, controlled impedance & LVDS.

VIBRATION RESISTANCE

Vibration test according to MIL-DTL-55302F §3.16 and §4.16.10 Test condition III 147.1m/s² (15g_n) @ ambient condition of use according to the Qualification test report conditions.

■ Extract

Vibration conditions shall be in accordance to the following conditions (condition III) :



Vibration conditions shall be in accordance with the following conditions (conditions III).

Frequency range Hz	Peak level	
High - 10 to 2000 Hz*	15 g _n	147.1 m/s ²

*This cycle shall be performed 12 times according to 3 axis

Test results (Female-Female & Octopus) :
 No electrical interruption greater than one microsecond during vibration test, no sign of loosening, fracture or other deterioration to the mounting hardware after the test.

→ MANUFACTURING

NICOMATIC has efficient automated production equipment adapted to mass production in all facilities in Europe, United States and Asia.

The company controls FFC cable production from lamination to isolation, laser cutting and shielding.

Contact manufacturing

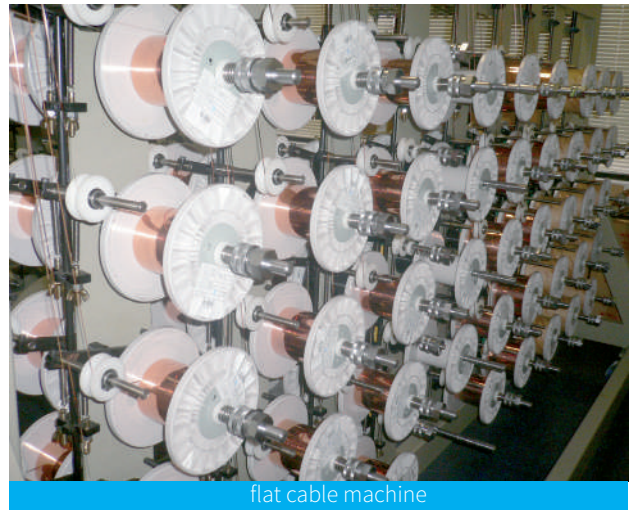
Developed and patented by NICOMATIC, the CRIMPFLEX™ connection system complies with the most rigorous electrical and mechanical requirements. Our contacts are designed and produced in our HQ. Thanks to 100% control of the manufacturing process, NICOMATIC ensures the quality and lead-time of our products, as well as a wide range and flexibility to specific requirements.



injection molding machine



crimp contact



flat cable machine

→ QUALITY

In order to meet the requirements of the high-technology electronics market, Nicomatic refers to EN9100 and ISO9001 certification to build its quality system.

The control of all steps from product conception to delivery allows our clients to obtain a product specifically adapted to their needs.

Our strategy of continuous quality improvement ensures long term development and growth for all of Nicomatic's partners. Nicomatic is compliant with RoHS and REACH requirements.

The company's commitment to provide ever higher levels of product quality and customer service is inspired by LEAN Management and is driven by an internal continuous improvement process called "LEXOR" (operational excellence).



■ EN 9100: 2009

■ ISO 9001: 2008

■ REACH

■ RoHS

■ UL standards

→ APPLICATIONS

Microflex jumpers are suitable for applications in various fields.

AVIONICS

Line replaceable unit, smart multifunction displays, generator control unit, test equipment, in flight entertainment systems...

DEFENSE

Telemetry system in aerial vehicle UAV, portable missiles, thermal cameras...

COMMUNICATION

Receiver simulator for weather radar, transceiver for satellite communication...

AUTOMATION

Printers, robotic platforms, identification and handling robots, sorters...

ENERGY

Batteries for electrical vehicles, accelerometer sensors...

MEDICAL

Imaging instruments, medical sensors, automation systems...

Microflex family fits to applications where customer requirements are:

- **space & weight saving:**
saves up to 60% vs round cables
- **flexibility:**
10 000 000 cycles (polyester cable)
- **resistance to vibration:**
Peak level 15 gn / 147.1 m/s²
according MIL DTL-55302F
(Female - Female & Octopus Microflex™)



avionics



defense



communication



automation



energy



medical

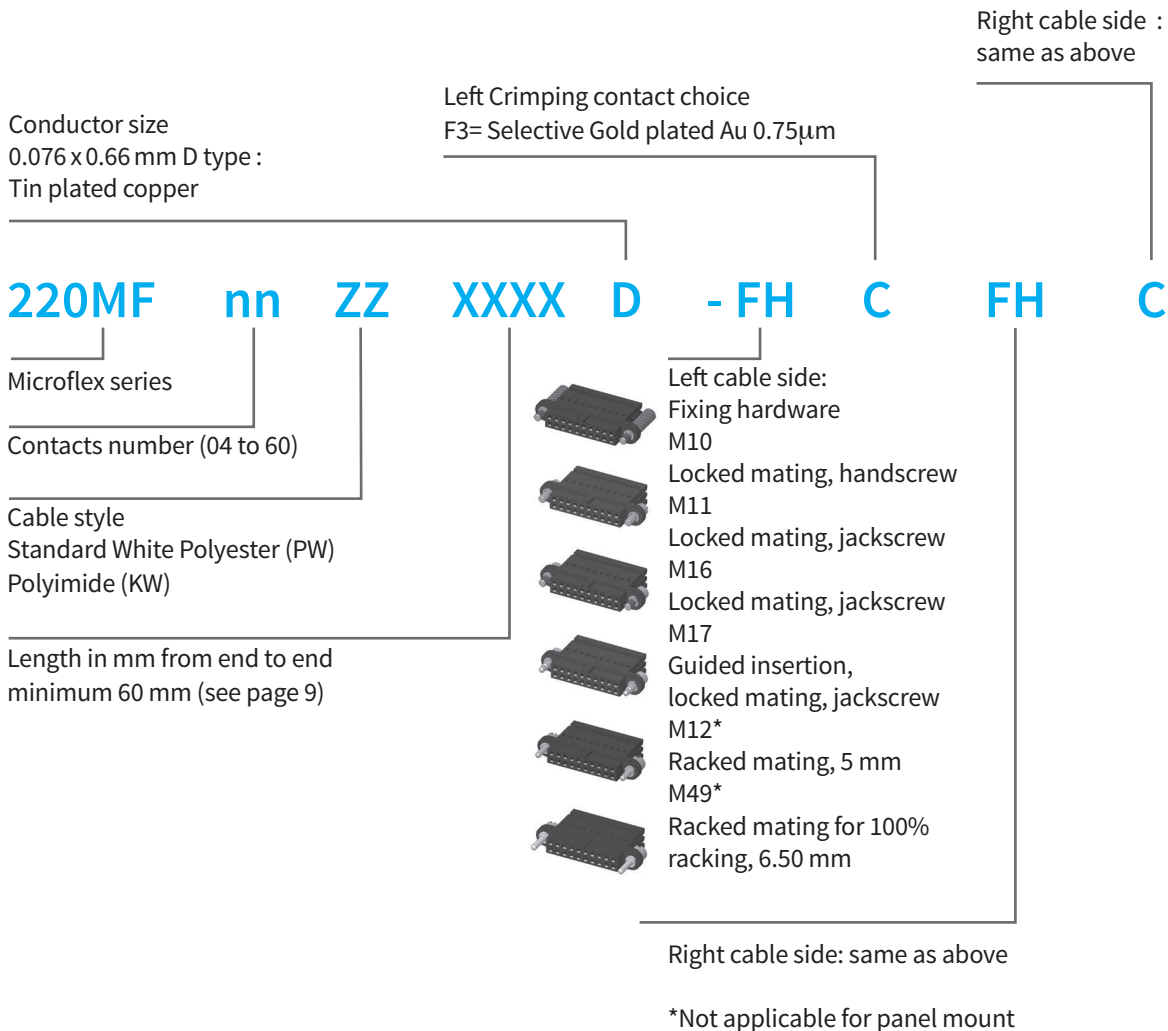
→ MICROFLEX FEMALE - FEMALE

- BOTH SIDES: FEMALE HOUSING TO MATE WITH CMM 220 SERIES CONNECTORS
- SCREW FIXING ON BOTH ENDS
- HIGH VIBRATION RESISTANCE
- DISCONNECTABLE ON BOTH SIDES



220MF26PW0150D-M16F3M16F3

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More options ?
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nicomatic.com/dl/microflex.pdf

CMM MATING PARTS			
Series	Contact type	Contact Layout	Fixing Hardware
221	S = To crimp Gauge 24-28	From 04 to 60	F21 = Locked mating, straight on 90°
	C = To crimp Gauge 22		F22 = Locked mating, straight on PCB 0.8 min / 2 m
	Y = Straight on PCB L 3 mm		F22H = F22 with hexagonal nut
	YL = Straight on PCB L 4.5 mm		F24 = Locked mating, straight on PCB 1.5 min / 4 m
	V = 90° on PCB L 3 mm		F24H = F24 fixing with hexagonal nut
	VL = 90° on PCB L 4.5 mm		F24L = F24 for PCB max 6 mm
	T = Straight SMT PCB L 3 mm		F28 = Locked mating for connector with cover
	TL = Straight SMT PCB L 4.10 mm		F26 = Locked mating, 90° on PCB hexagonal socket
	R = 90° SMT L 0.9 mm		F23 = Locked mating, 90° on PCB
			F30 = Locked mating, 90° on PCB max 2.5
			F30H = F30 with hexagonal nut
			F31 = Locked mating, 90° on PCB max 4.5 mm
			F31H = F31 with hexagonal nut
			F34 = Card edge locked mating
	F62 = 100% guided racking, straight PCB		
	F25 = 100% guided racking 90° PCB		

More options ?
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nicomatic.com/dl/microflex.pdf

STRAIGHT

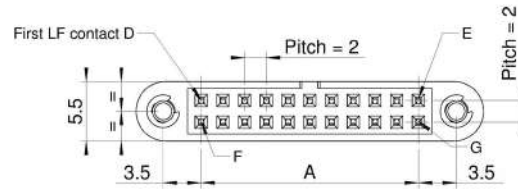
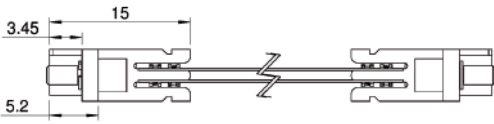
90°

LOCKED MATING

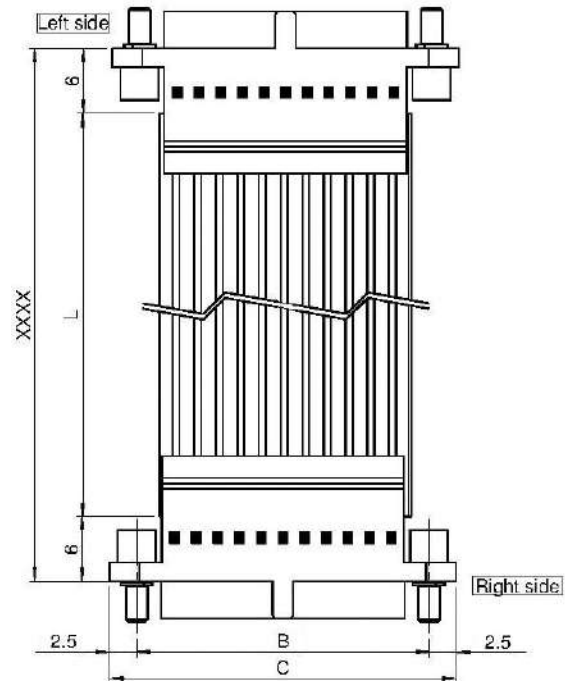
RACKING

CMM MATING FIXING HARDWARE																	
		F28	F34	F21	F22	F22H	F24	F24H	F24L	F25	F26	F23	F30	F30H	F31	F31H	F62
MICROFLEX FIXING HARDWARE	M10	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	M11	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	M12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	M16	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	M17	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	M49																

→ DIMENSIONS

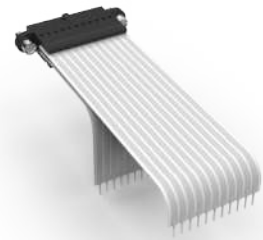


MICROFLEX HOUSINGS							
LF contacts number	Distance between axes (mm)		Length (mm)	LF contacts reference mark number			
	A	B		D	E	F	G
04	2	9	14	1	2	3	4
06	4	11	16	1	3	4	6
08	6	13	18	1	4	5	8
10	8	15	20	1	5	6	10
12	10	17	22	1	6	7	12
14	12	19	24	1	7	8	14
16	14	21	26	1	8	9	16
18	16	23	28	1	9	10	18
20	18	25	30	1	10	11	20
22	20	27	32	1	11	12	22
24	22	29	34	1	12	13	24
26	24	31	36	1	13	14	26
28	26	33	38	1	14	15	28
30	28	35	40	1	15	16	30
32	30	37	42	1	16	17	32
34	32	39	44	1	17	18	34
36	34	41	46	1	18	19	36
38	36	43	48	1	19	20	38
40	38	45	50	1	20	21	40
42	40	47	52	1	21	22	42
44	42	49	54	1	22	23	44
46	44	51	56	1	23	24	46
48	46	53	58	1	24	25	48
50	48	55	60	1	25	26	50
52	50	57	62	1	26	27	52
54	52	59	64	1	27	28	54
56	54	61	66	1	28	29	56
58	56	63	68	1	29	30	58
60	58	65	70	1	30	31	60



→ MICROFLEX SOLDERPIN-FEMALE

- ONE SIDE: FEMALE HOUSING TO MATE WITH CMM 220 SERIES CONNECTORS
- ON OTHER SIDE : SOLDERPIN CONTACT
- DIFFERENT LENGTHS ON EACH BRANCH OPTIONS
- PANEL MOUNT
- NUMEROUS FIXING HARDWARE OPTIONS



220MF22PW0100T-T1M16F3

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Contact selected for the female side
 Right cable side : contact plating
 F3 = selective Gold plated Au 0.75 μm

Conductor size
 AWG 26 – 1.30 mm x 0.10 mm
 T type: Tin plated copper

Left cable side:
 T1 Tin plated - Solderpin contacts

220 MF **nn** **ZZ** **XXXX** **T** **-** **T1** **FH** **C**

Microflex series

Contacts number (04 to 60)

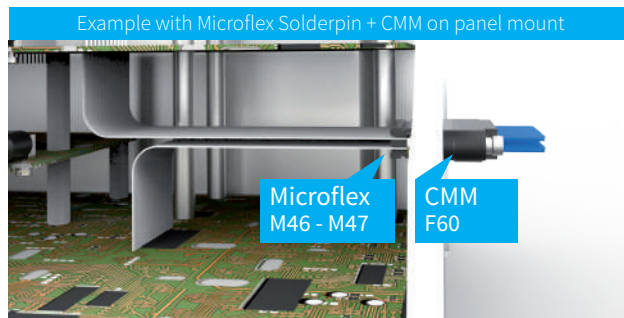
Cable style
 Standard White Polyester (PW)
 Kapton (KW)

Length in mm from end to end
 minimum 55 mm

Right cable side : Fixing hardware
 Fixing hardware table :

- M10 Locked mating, handscrew
- M11 Locked mating, jackscrew
- M16 Locked mating, jackscrew
- M17 Guided insertion, locked mating jackscrew
- M46 Locked mating for reverse fixing, on PCB 1.5 mm / 2.5 max
- M47 Locked mating for reverse fixing, on pcb 1.5 min / 4 max
- M12 Racked mating, on pcb 0.8 min / 2 max
- M12L Racked mating, on pcb 1.5 min / 4 max
- M49 Racked mating for 100% racking, on pcb 0.8 min / 2 max
- M49L Racked mating for 100% guided racking, on pcb 1.5 min / 4 max

For different lengths on each branch
 ask a specific PN to your sales contact.



+ Reverse construction w/CMM on PCB + Microflex on panel mount possible. Please contact us.

CMM MATING PARTS

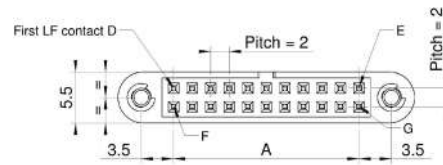
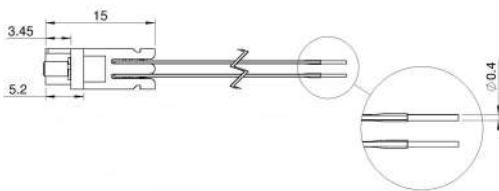
Series	Contact type	Contact Layout	Fixing Hardware		
221	S = To crimp Gauge 24-28	From 04 to 60	F21 = Locked mating, straight on PCB	STRAIGHT	
C = To crimp Gauge 22		F60 = Locked mating, straight on PCB			
Y = Straight on PCB L 3 mm		F22 = Locked mating, straight on PCB 0.8 min / 2 max			
YL = Straight on PCB L 4.5 mm		F22H = F22 with hexagonal nut			
V = 90° on PCB L 3 mm		F24 = Locked mating, straight on PCB 1.5 min / 4 max			
VL = 90° on PCB L 4.5 mm		F24H = F24 fixing with hexagonal nut			
T = Straight SMT PCB L 3 mm		F24L = F24 for PCB max 6 mm			
TL = Straight SMT PCB L 4.10 mm		F28 = Locked mating for connector with cover	LOCKED MATING		
R = 90° SMT L 0.9 mm		F26 = Locked mating, 90° on PCB hexagonal socket			
		F23 = Locked mating, 90° on PCB			
		F63 = Locked mating, 90° on PCB max 1.6 mm			
		F63L = Locked mating, 90° on PCB max 3.2 mm			
		F30 = Locked mating, 90° on PCB max 2.5			
		F30H = F30 with hexagonal nut			
		F31 = Locked mating, 90° on PCB max 4.5 mm			
		F31H = F31 with hexagonal nut			
		F34 = Card edge locked mating			
		F62 = 100% guided racking, straight PCB	RACKING		
		F25 = 100% guided racking 90° PCB			

More options ?
 Download the interactive pdf
nicomatic.com/dl/microflex.pdf

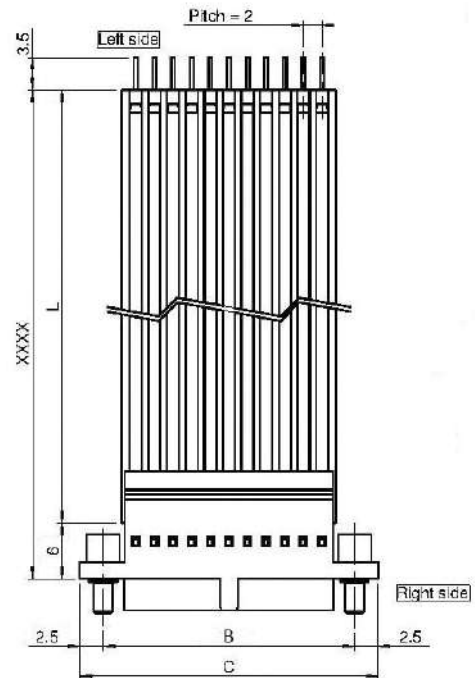
CMM MATING FIXING HARDWARE

		F28	F34	F21	F22	F22H	F24	F24H	F24L	F25	F26	F23	F30	F30H	F31	F31H	F60	F62	F63	F63L	
MICROFLEX FIXING HARDWARE	M10	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓					
	M11	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓					
	M12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			
	M12L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			
	M16	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓					
	M17	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓					
	M46																	✓		✓	✓
	M47																	✓		✓	✓
	M49																		✓		
	M49L																		✓		

→ DIMENSIONS



MICROFLEX HOUSINGS							
LF contacts number	Distance between axes (mm)		Length (mm)	LF contacts reference mark number			
	A	B		D	E	F	G
04	2	9	14	1	2	3	4
06	4	11	16	1	3	4	6
08	6	13	18	1	4	5	8
10	8	15	20	1	5	6	10
12	10	17	22	1	6	7	12
14	12	19	24	1	7	8	14
16	14	21	26	1	8	9	16
18	16	23	28	1	9	10	18
20	18	25	30	1	10	11	20
22	20	27	32	1	11	12	22
24	22	29	34	1	12	13	24
26	24	31	36	1	13	14	26
28	26	33	38	1	14	15	28
30	28	35	40	1	15	16	30
32	30	37	42	1	16	17	32
34	32	39	44	1	17	18	34
36	34	41	46	1	18	19	36
38	36	43	48	1	19	20	38
40	38	45	50	1	20	21	40
42	40	47	52	1	21	22	42
44	42	49	54	1	22	23	44
46	44	51	56	1	23	24	46
48	46	53	58	1	24	25	48
50	48	55	60	1	25	26	50
52	50	57	62	1	26	27	52
54	52	59	64	1	27	28	54
56	54	61	66	1	28	29	56
58	56	63	68	1	29	30	58
60	58	65	70	1	30	31	60



→ MICROFLEX OCTOPUS

- FEMALE HOUSING ON BOTH SIDES
- DIFFERENT LENGTHS UPON REQUEST
- UP TO 10 BRANCHES



PN C17XXX

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As there are over 200 possible configurations, customer specific part numbers will be issued. Please ask your sales contact.

FIXING HARDWARE OPTIONS:



M10
Locked mating, handscrew



M11
Locked mating, jackscrew



M16
Locked mating, jackscrew



M17
Guided insertion, locked mating, jackscrew



M12*
Racked mating, 5 mm



M49*
Racked mating for 100% racking, 6.50 mm

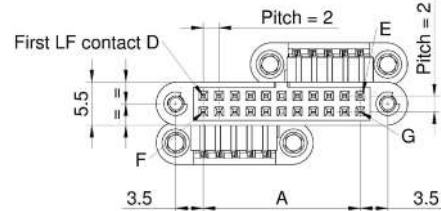
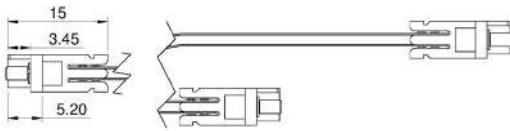


More options ?
Download the interactive pdf
nicomatic.com/dl/microflex.pdf

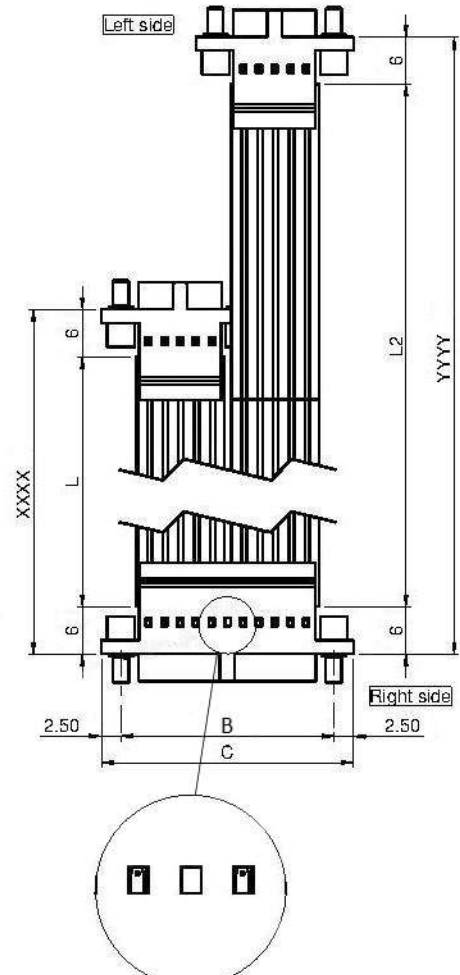
* Not applicable for panel mount

		CMM MATING FIXING HARDWARE															
		F28	F34	F21	F22	F22H	F24	F24H	F24L	F25	F26	F23	F30	F30H	F31	F31H	F62
MICROFLEX FIXING HARDWARE	M10	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	M11	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	M12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	M16	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	M17	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	M49																

→ DIMENSIONS



MICROFLEX HOUSINGS							
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12	10	17	22	1	6	7	12
14	12	19	24	1	7	8	14
16	14	21	26	1	8	9	16
18	16	23	28	1	9	10	18
20	18	25	30	1	10	11	20
22	20	27	32	1	11	12	22
24	22	29	34	1	12	13	24
26	24	31	36	1	13	14	26
28	26	33	38	1	14	15	28
30	28	35	40	1	15	16	30
32	30	37	42	1	16	17	32
34	32	39	44	1	17	18	34
36	34	41	46	1	18	19	36
38	36	43	48	1	19	20	38
40	38	45	50	1	20	21	40
42	40	47	52	1	21	22	42
44	42	49	54	1	22	23	44
46	44	51	56	1	23	24	46
48	46	53	58	1	24	25	48
50	48	55	60	1	25	26	50
52	50	57	62	1	26	27	52
54	52	59	64	1	27	28	54
56	54	61	66	1	28	29	56
58	56	63	68	1	29	30	58
60	58	65	70	1	30	31	60



The main housing requires two empty cavities.
 Example: For a main housing of 22 pins,
 the two branches' housings will be 10pins and 10pins

→ *NICOMATIC PRODUCT RANGES*

HIGH PERFORMANCE CONNECTORS

→ CMM connectors
DMM Micro-D-Mix™ connectors
OMM 8-series micro circular
Microflex™...



CONNECTORS FOR FLEXIBLE CIRCUITS & FFC CABLES



→ CRIMP FLEX™ connectors
FFC cables Jumpers
Crimping presses...



DOMES & COMPONENTS FOR HUMAN/MACHINE INTERFACE

→ Switch'air™ domes
Dome arrays
LEDs for membrane switches
Adhesive spacers...



WHY BUY NICOMATIC FROM INELCO HUNTER?

Short lead times and outstanding product quality maximise customer satisfaction. Inelco Hunter and Nicomatic have a range of services designed to provide :

- > time saving
- > responsiveness
- > reliable answer

SALES & ONLINE SERVICES

- > **Short lead-time** : one week premium option
- > **Products trial**: Fast sampling and prototyping
- > **Free sample kits**: ask your usual sales contact

SUPPORT SERVICES

- > **Custom solution**
Specific product design - reply in under 5 days, technical and sales support for all your custom designs: feasibility study, quote, drawing, engineer to engineer direct contact...
- > **Technic**
Fast & reliable technical support - all standard product ranges answer within one working day.
- > **Quality**
Dedicated quality service – set up to direct all quality requests, eg. Material certificates, plating, conformity, customer claims...

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