



CREATIVE
INTERCONNECT
SOLUTIONS

MICROFLEX

MIL-55302F PERFORMANCES

HI-REL
FLEXIBLE

HARNESS

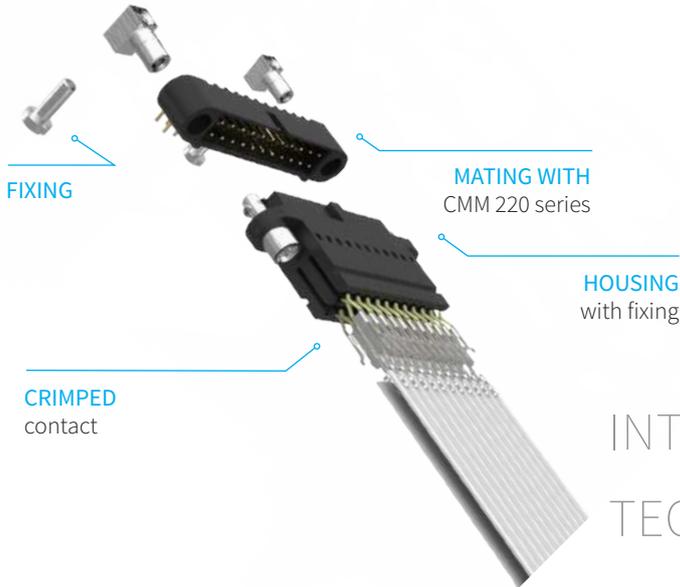


HARSH
ENVIRONMENT

2mm
pitch

MICROFLEX
technology

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→ INTRODUCTION

MICROFLEX

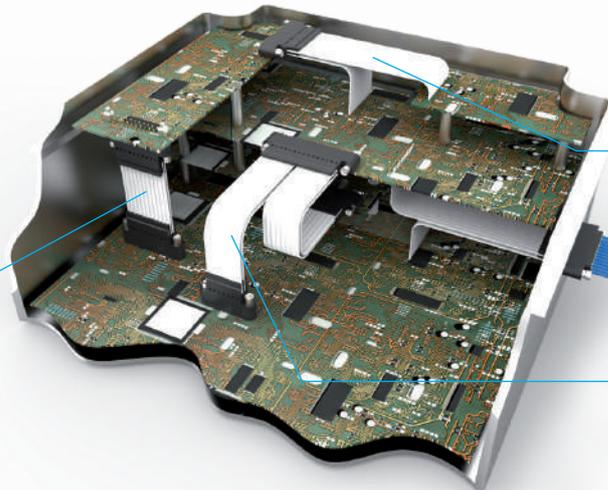
MICROFLEX jumpers suit applications where space & weight savings are critical. The use of screw fixings provides **strong mechanical resistance** for use in **high vibration environments** such as: equipment in medical, aircraft control, in-flight entertainment, electrical power systems, optronics, multi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

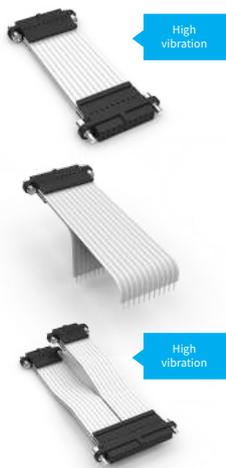
CMM 220
Mating with

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](http://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 2 μ + Sn pur 3 to 5 μ + Au 0.75 μ)

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

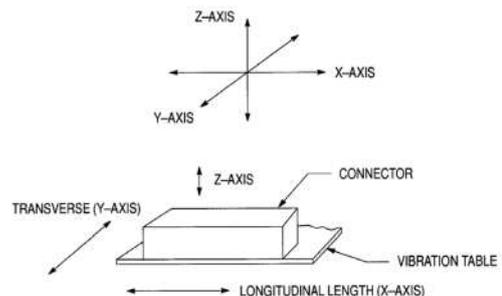
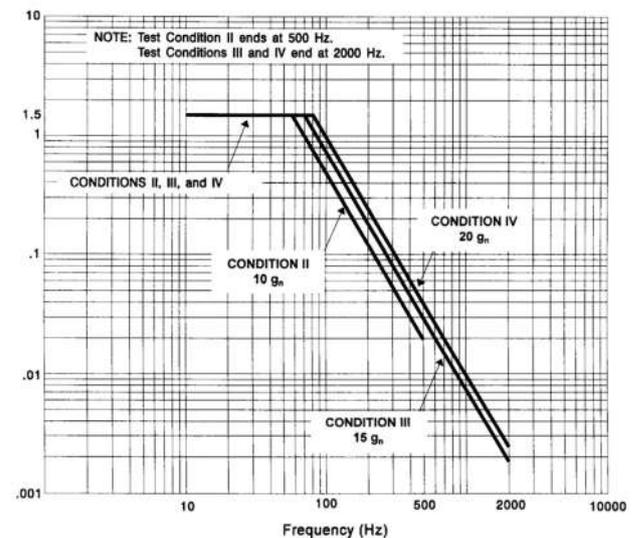
Other option upon request:
Shielding, high temperature, material, controlled impedance & LVDS.

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

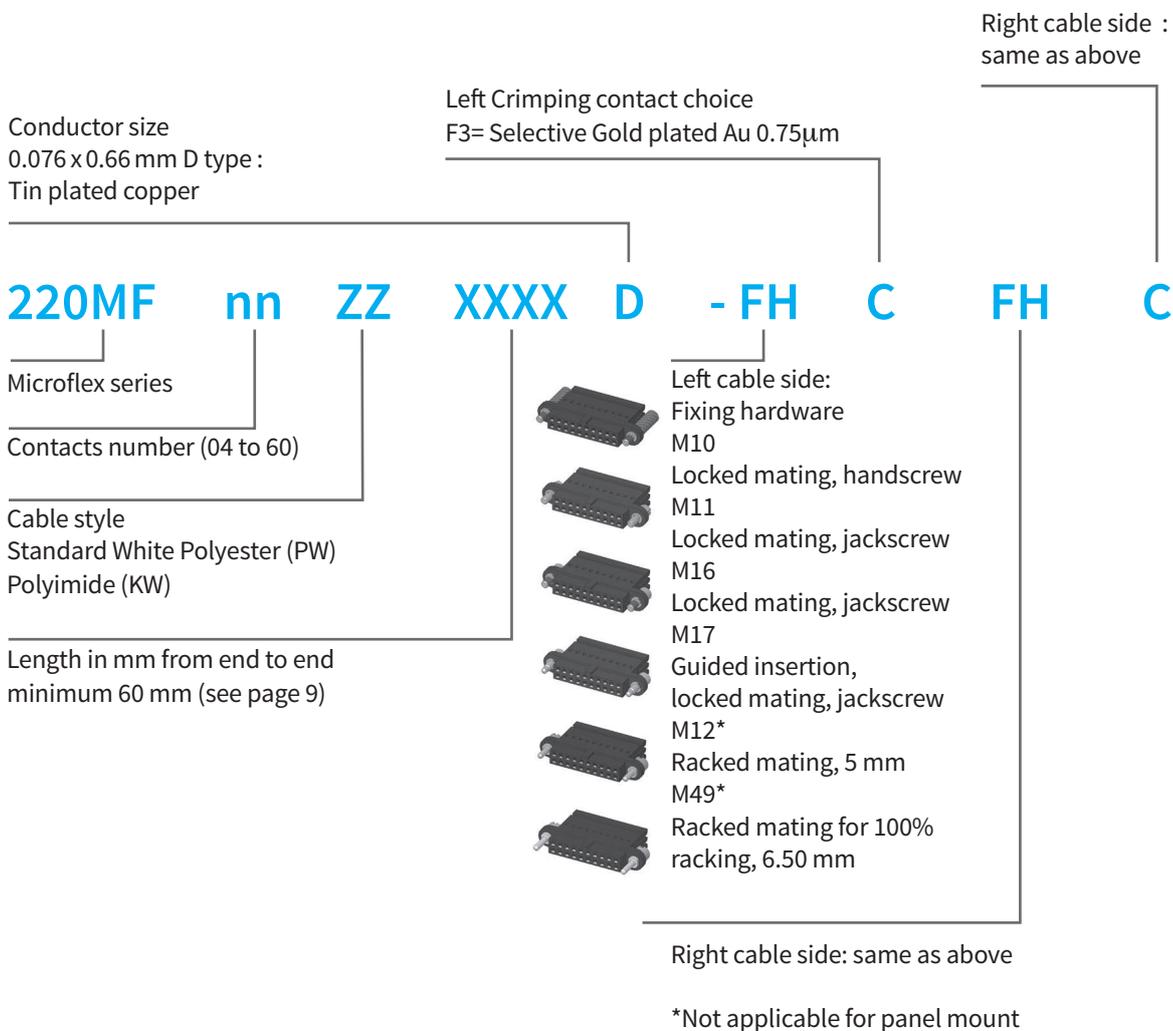
→ MICROFLEX FEMALE - FEMALE

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



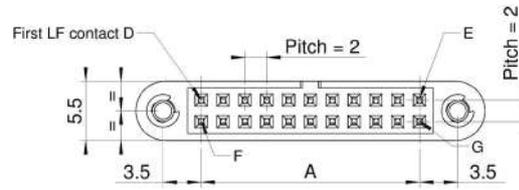
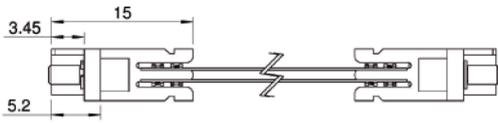
220MF26PW0150D-M16F3M16F3

→ HOW TO ORDER

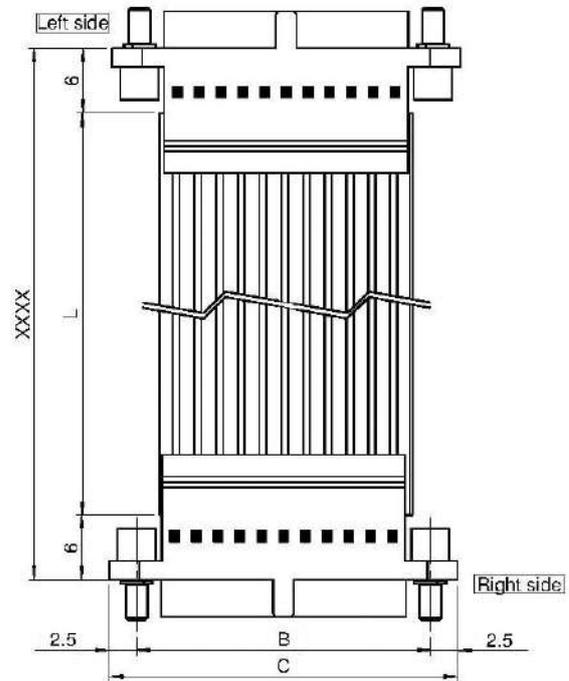


More options ?
Download the interactive pdf:
nicomatic.com/dl/microflex.pdf

→ DIMENSIONS

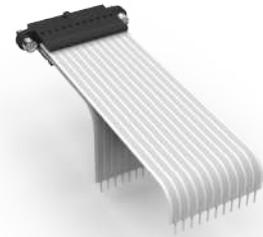


MICROFLEX HOUSINGS							
LF contacts number	Distance between axes (mm)		Length (mm)	LF contacts reference mark number			
	A	B		D	E	F	G
04	2	9	14	1	2	3	4
06	4	11	16	1	3	4	6
08	6	13	18	1	4	5	8
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26	24	31	36	1	13	14	26
28	26	33	38	1	14	15	28
30	28	35	40	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

→ HOW TO ORDER

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

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

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

Left cable side:
T1 Tin plated - Solderpin contacts

Right cable side : Fixing hardware
Fixing hardware table :

M10	Locked mating, handscrew
M11	Locked mating, jackscrew
M16	Locked mating, jackscrew
M17	Locked mating, jackscrew
M46	Guided insertion, locked mating jackscrew
M47	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.

Example with Microflex Solderpin + CMM on panel mount

Microflex
M46 - M47

CMM
F60

+ 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
	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
	R = 90° SMT L 0.9 mm		F26 = Locked mating, 90° on PCB hexagonal socket
	More options ? Download the interactive pdf nicomatic.com/dl/microflex.pdf		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
			F25 = 100% guided racking 90° PCB

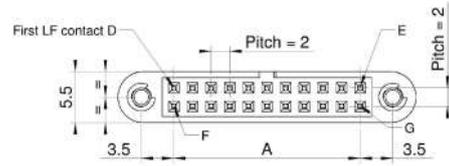
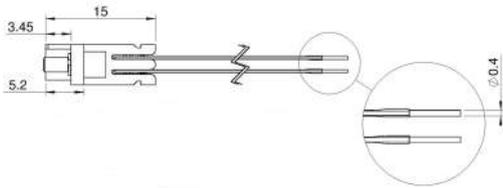
STRAIGHT
90°
RACKING

CMM MATING FIXING HARDWARE

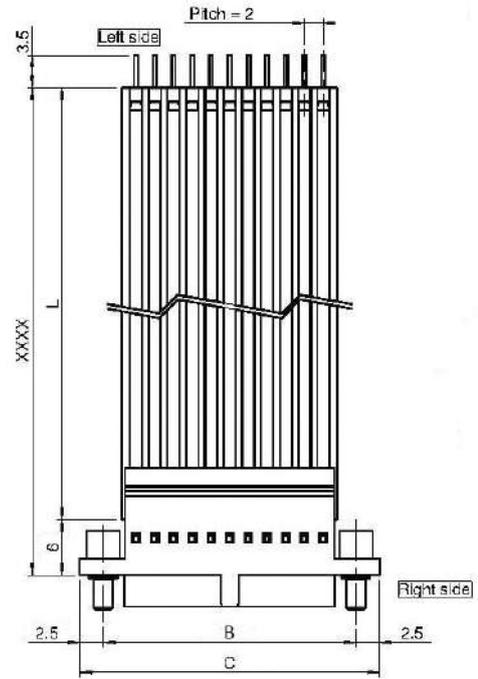
		F28	F34	F21	F22	F22H	F24	F24H	F24L	F25	F26	F23	F30	F30H	F31	F31H	F60	F62	F63	F63L	
MICROFLEX FIXING HARDWARE	M10	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓					
	M11	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓					
	M12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		
	M12L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		
	M16	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓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



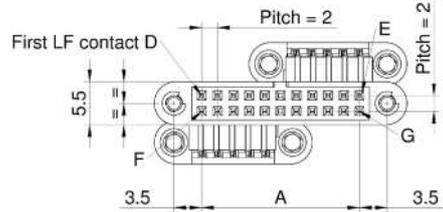
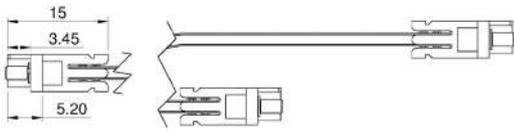
→ DIMENSIONS



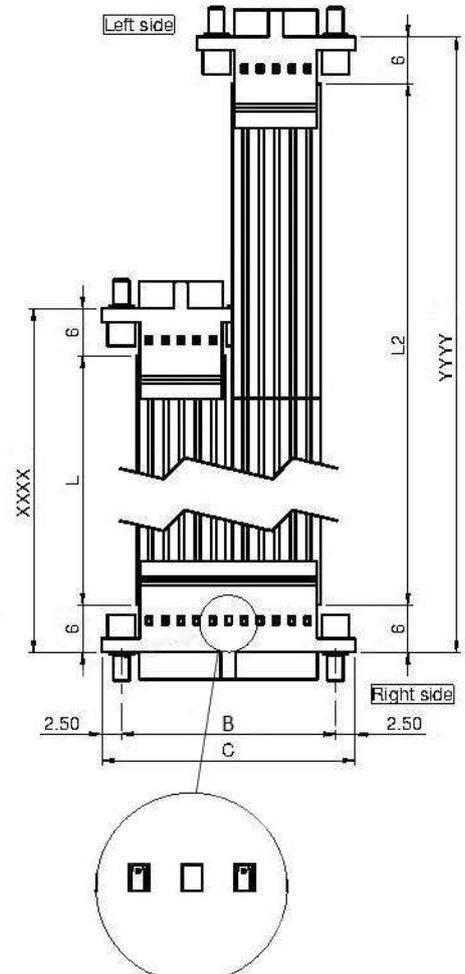
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→ DIMENSIONS



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

→ OUR MAIN PRODUCT RANGES

HIGH PERFORMANCE CONNECTORS

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



CONNECTORS FOR FLEXIBLE CIRCUITS & FFC CABLES



→ CRIMPFLEX™ connectors
FFC cables Jumpers
Crimping presses...



DOMES & COMPONENTS FOR MAN/MACHINE INTERFACE

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



WHY MAKE NICOMATIC YOUR KEY PARTNER?

Short lead time & outstanding product quality maximize customer satisfaction. Nicomatic have a range of services designed to provide:

- > time saving
- > responsiveness
- > reliable answer

View in detail under:
www.nicomatic.com/direct.htm

SALES & ONLINE SERVICES

- > **Short lead-time:** one week premium option
- > **My Nicomatic free membership:** get 2D/3D drawings for in < 48 hours - no charge !
- > **Products trial:** Fast sampling and prototyping
- > **Free sample kits:** ask your usual Nicomatic sales contact

SUPPORT SERVICES

> **Custom solution**
Specific product design - reply in under 5 days, technical & 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 < 24 hours. Technical FAQ also available online.

> **Quality**

Dedicated quality service – set up to direct all quality requests, eg. Material certificates, plating, conformity, customer claims...

Date of issue: December 2018
Catalogue reference :
C.2.0DMICRRROFLEX_EN

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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HEADQUARTER

FRANCE

T: +33 (0)4 50 36 13 85
france@nicomatic.com

MEMBER OF
Gifas - Eden
Aerospace cluster

SUBSIDIARIES

UNITED STATES

T: +1 21 54 44 95 80
usa@nicomatic.com

CHINA

T: +86 (0)22 23 85 88 35
china@nicomatic.com

INDIA

T: +91 80 421 315 74
india@nicomatic.com

UNITED KINGDOM

T: +44 (0)11 89 65 40 24
uk@nicomatic.com

GERMANY

T: +49 (0) 30 89 39 49 46
germany@nicomatic.com

TURKEY

T: +90 (0) 212 709 84 64
turkey@nicomatic.com

SOUTH KOREA

T: +82 (0)2 553 6822
korea@nicomatic.com

JAPAN

T: +81 (0)3 68 24 95 45
japan@nicomatic.com

SINGAPORE

T: +65 67 35 55 23
singapore@nicomatic.com

CANADA

T: +41 (0) 438 885 3395
canada@nicomatic.com

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WEBSITE
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