

FLOW SENSORS

SERIES FSX

Sizes: 70 - 90




Series FSX is available for flow rates ranging from 20 to 2000 l/min (ANR), 50 to 5000 l/min (ANR) and from 100 to 10000 l/min (ANR), offered in two different sizes.

The flow sensor includes also a pressure sensor, a temperature sensor and an optional humidity sensor.

Main features:

- Real-time reading of Flow, Pressure, Temperature, Humidity (optional)
- Real-time monitoring of Power (kW), Energy (kWh), Consumption (m³), Dew Point (optional).

Data output through Ethernet network protocol.

Data management software with a complete user interface (UVIX).



Scan the QR code to see all information about UVIX software.



Wide range of flow rates

- Available for flow rates ranging between 2000 - 5000 - 10000 l/min (ANR)

Multiple sizes

- Choice between two sizes to suit specific needs

Modular

- Modularly adaptable with FRL Series MX2 and MX3

Sensing

- Real-time reading of flow, pressure, temperature and humidity

Monitoring

- Real-time monitoring of power (kW), energy (kWh), consumption (m³) and dew point

FLOW SENSORS
SERIES FSX - GENERAL DATA
General Data

Mod.	FSX
Measured flow rates	20 ÷ 2000 l/min (ANR) 50 ÷ 5000 l/min (ANR) 100 ÷ 10000 l/min (ANR)
Medium	Compressed, filtered and non-lubricated air in class [7:4:4] according to ISO 8573-1:2010. Inert gases (Argon, CO ₂ , Helium, Nitrogen)
Flow direction	Unidirectional
Measuring method	Thermal
Working pressure	0 ÷ 10 bar
Pressure drop	See pressure drop chart
Fluid temperature	-5 ÷ 50 °C
Environmental temperature	-5 ÷ 50 °C
Filtering element	25 µm
Warm-up time	10 min
Materials	Aluminium, PC, NBR, PA, POM, Bronze, Polyethylene, FKM, Stainless steel, Brass, Stainless steel SS304, Epoxy resin, Polyester

Flow rate	±3% of FS	(2000-5000 l/min ANR)
Accuracy of measured flow	For working pressures between 2 and 4 bar ±4% of FS For working pressures >4 bar ±3% of FS For working pressures <2 bar ±4% of FS + ±4% RDG	(10000 l/min ANR)
Repeatability	±1% of FS	
Temperature characteristic	Outside the nominal temperature (20°C) ±0,25% of the measured value every °C	
Response time	1 s	

Pressure	
Range	0 ÷ 10 bar
Accuracy of pressure display	±0,25% of FS

Temperature	
Rated temperature range	-5 ÷ 50 °C
Accuracy of temperature	±1°C

Humidity*	
Range	0 -100 % RH
Accuracy	3% (0 ÷ 10%) 7% (10 ÷ 25%) 10% (25 ÷ 50%)

* Only for PTU model

Mechanics	
Threaded ports	G1/2" (2000-5000 l/min ANR) G1" (5000-10000 l/min ANR)
Protection class	IP 64

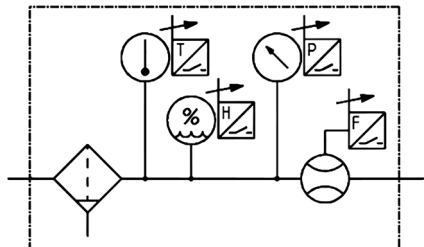
Electronics	
Output signal	Ethernet-MQTT/OPC UA
Ethernet connection	M12 D 5 pin, female
Power supply connection	4 pin, male
Power supply voltage	24 V DC ±10%

Coding Example

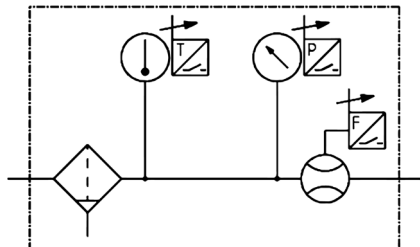
FSX	-	2	12	Y	-	E	050	-	E	PTO	0	-	0	R	00
FSX	SERIES FSX = Flow sensor														
2	SIZE 2 = Sensor on MX2 base 3 = Sensor on MX3 base														
12	PORT SIZE 12 = MX2 G1/2 thread (Native thread, without flanges) 10 = MX3 G1 thread (Native thread, without flanges) 38 = MX2 G3/8 thread (Bracket Solution H-K-J) 34 = MX3 G3/4 thread (Bracket Solution H-K-J) 11 = NPTF 1 thread (Bracket Solution H-K-J) 13 = NPTF 1/2 thread (Bracket Solution H-K-J) 39 = NPTF 3/8 thread (Bracket Solution H-K-J) 35 = NPTF 3/4 thread (Bracket Solution H-K-J)														
Y	BRACKET X = Central clamp type X "without fixing" (only for version 10, 12) Y = Central clamp type Y "with wall fixing flange" (only for version 10, 12) Z = Central clamp type Z "with through-bolt fixing" (only for version 10, 12) H = Side clamps without fixing and side flanges K = Side clamps for wall fixing and side flanges J = Side clamps for fixing with through-bolts and side flanges														
E	DISPLAY E = Without Display														
050	FLOW RATE RANGE 020 = 2000 l/min ANR (only size 2) 050 = 5000 l/min ANR 100 = 10000 l/min ANR (only size 3)														
E	OUTPUT SPECIFICATIONS E = Ethernet														
PTO	SENSOR READING PT0 = Pressure, temperature PTU = Pressure, temperature, humidity														
0	CLOSED LOOP FLOW 0 = Without proportional flow valve														
0	DRAINING OF CONDENSATE 0 = Semiautomatic-manual drain 3 = Automatic drain														
R	FLOW DIRECTION R = From left to right L = From right to left														
00	CERTIFICATION 00 = None														

Symbols for FSX

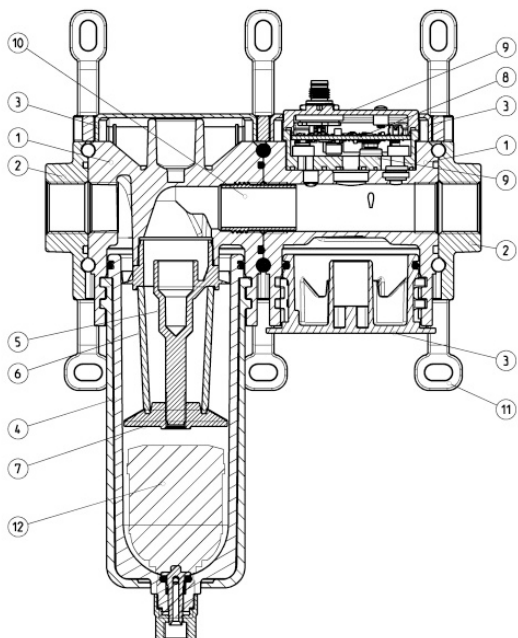
FL02



FL03



Series FSX Flow Sensors - Materials



Parts	Materials
1 = Body	Aluminium
2 = Bracket	Aluminium
3 = Cover	POM
4 = Bowl/ Coating of bowl	PC/PA
5 = Centrifugal deflector	POM
6 = Filtering Element	Bronze (FSX2) / Polyethylene (FSX3)
7 = Separation Deflector	POM
8 = PCB and sensor board	RAEE
9 = Interfaces	Technopolymer
10 = Stabiliser	Technopolymer
11 = Clamps	PA
12 = Automatic draining	POM / Stainless steel / NBR
Seals	FKM / NBR / VMQ
Screws	Steel
Sensor	Stainless steel/ Epoxy resin/ Polyester/ Glass/ Ceramic

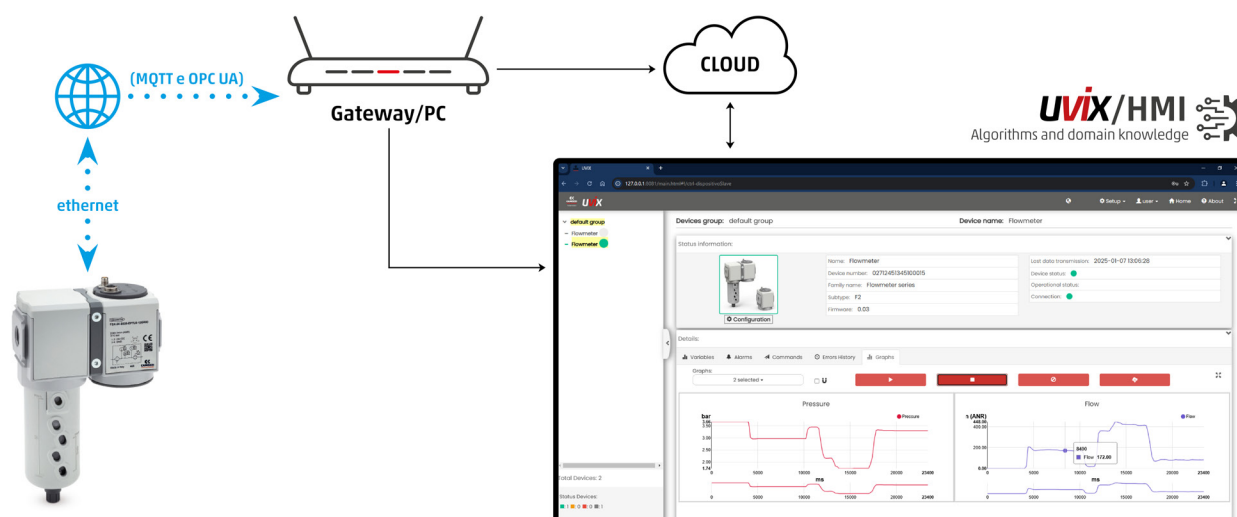
UVIX - The complete solution for configuring and monitoring the flow sensor Series FSX

UVIX is the advanced software that allows you to accurately configure the flow sensor Series FSX, ensuring maximum flexibility and total control over settings.

Thanks to its intuitive interface, UVIX allows you to:

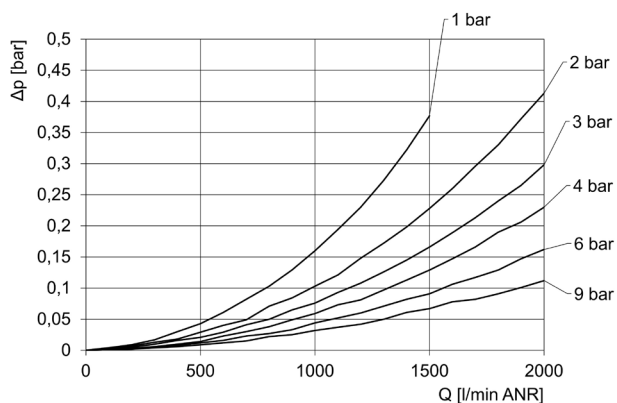
- modify sensor configuration parameters quickly and easily;
- view acquired data in real time, for constant monitoring;
- analyse value trends with detailed graphical representations.

Designed to provide a smooth and efficient user experience, UVIX is the ideal tool for optimising the performance and management of the sensor Series FSX.



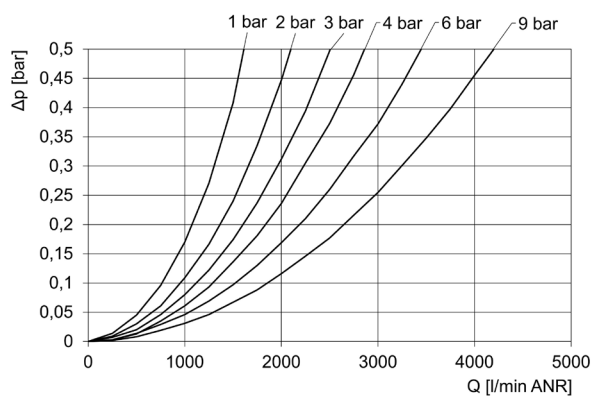
Pressure drop diagrams for each flow sensor

FSX-2...020



ΔP = Pressure Drop at different operating pressures
 Q = Flow

FSX-2...050

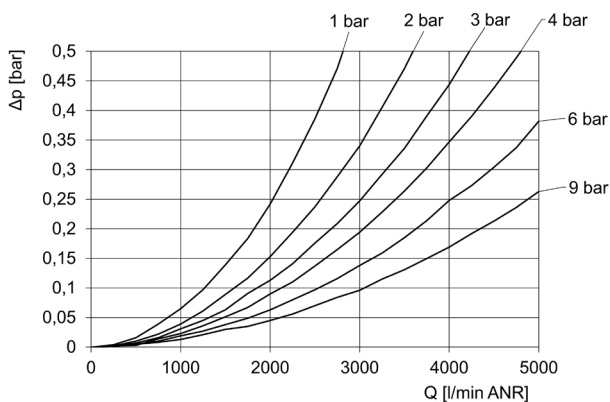


ΔP = Pressure Drop at different operating pressures
 Q = Flow

AIR TREATMENT

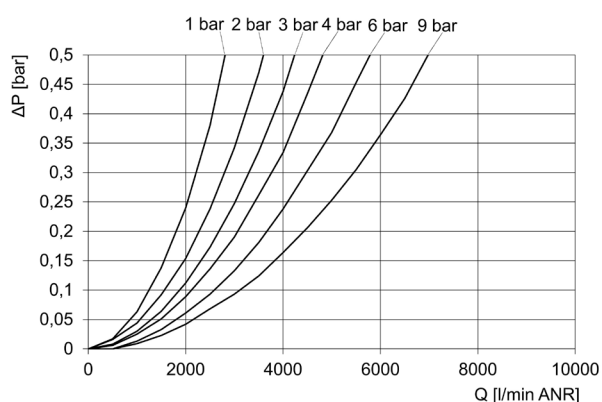
9

FSX-3...050



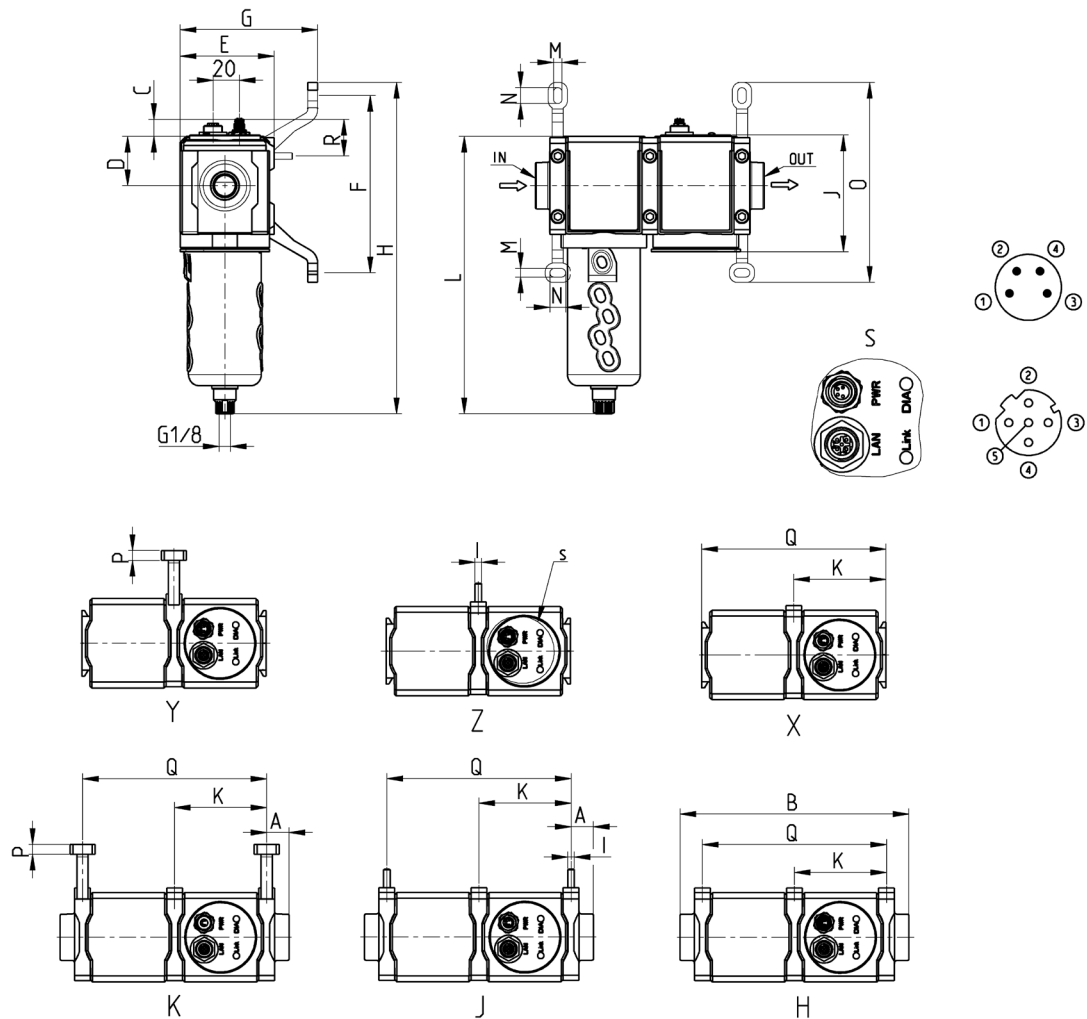
ΔP = Pressure Drop at different operating pressures
 Q = Flow

FSX-3...100



ΔP = Pressure Drop at different operating pressures
 Q = Flow

FSX flow sensor - dimensions



Mod.	A	B	C	D	E	F	G	H	I	J	K	L	M	M	N	O	P	Q	R
FSX-212X-..	-	140	13	37,5	72	-	-	-	-	91	70	211	203	-	-	-	-	140	-
FSX-212Y-..	-	140	13	37,5	72	135	105	252	-	91	70	211	203	6,5	12	152	7,5	140	-
FSX-212Z-..	-	140	13	37,5	72	-	86	-	M5	91	70	211	203	-	-	-	-	140	18
FSX-2*H-..	17	174	13	37,5	72	-	-	-	-	91	70	211	203	-	-	-	-	140	-
FSX-2*J-..	17	174	13	37,5	72	-	-	-	M5	91	70	211	203	-	-	-	-	140	18
FSX-2*K-..	17	174	13	37,5	72	135	105	252	-	91	70	211	203	6,5	12	152	7,5	140	-
FSX-310X-..	-	180	253	196	78	-	-	-	-	104	90	240	234	-	-	-	-	179	-
FSX-310Y-..	-	180	253	196	78	160,5	106	290	-	104	90	240	234	8,4	15	181	7,7	179	-
FSX-310Z-..	-	180	253	196	78	-	91	-	M6	104	90	240	234	-	-	-	-	179	19
FSX-3*H-..	20,6	221	253	196	78	-	-	-	-	104	90	240	234	-	-	-	-	179	-
FSX-3*J-..	20,6	221	253	196	78	-	-	-	M6	104	90	240	234	-	-	-	-	179	19
FSX-3*K-..	20,6	221	253	196	78	160,5	106	290	-	104	90	240	234	8,4	15	181	7,7	179	-

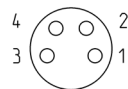
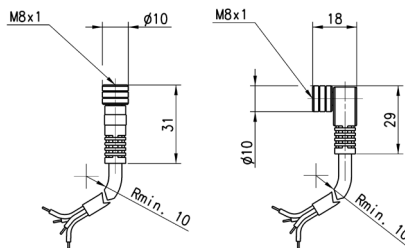
Mod.	Flow rate [l/min]	Sensors	Minimum tube length	Flow direction	Display
FSX-2***-E020-EPT00-12-*R00	2000	Pressure/temperature	-	Left to right	NO
FSX-2***-E020-EPTU0-12-*R00	2000	Pressure/temperature/humidity	-	Left to right	NO
FSX-2***-E050-EPT00-12-*R00	5000	Pressure/temperature	-	Left to right	NO
FSX-2***-E050-EPTU0-12-*R00	5000	Pressure/temperature/humidity	-	Left to right	NO
FSX-3***-E100-EPT00-10-*R00	10000	Pressure/temperature	-	Left to right	NO
FSX-3***-E100-EPTU0-10-*R00	10000	Pressure/temperature/humidity	-	Left to right	NO
FSX-3***-E050-EPT00-*R00	5000	Pressure/temperature	-	Left to right	NO
FSX-3***-E050-EPTU0-*R00	5000	Pressure/temperature/humidity	-	Left to right	NO

Circular M8 4-pole connectors, female

Power supply



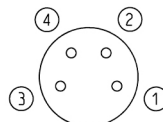
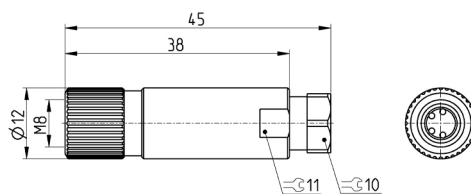
With PU sheathing, non shielded cable.
 Protection class: IP65.



Mod.	Type of connector	Cable length [m]
CS-DF04EG-E200	Straight	2
CS-DF04EG-E500	Straight	5
CS-DR04EG-E200	90°	2
CS-DR04EG-E500	90°	5

Wiring connector, M8 4 pin, female

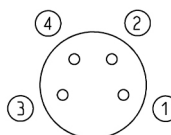
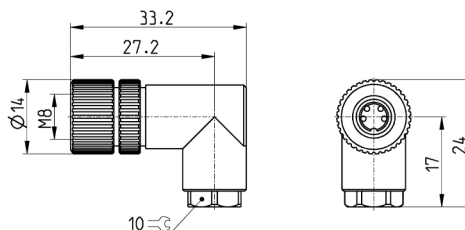
Power supply



Mod.	Description	Type of connector	Connection
CS-DF04HB	Wiring	Straight	M8 4 pin female

Wiring connector, 90°, M8 4 pin, female

Power supply



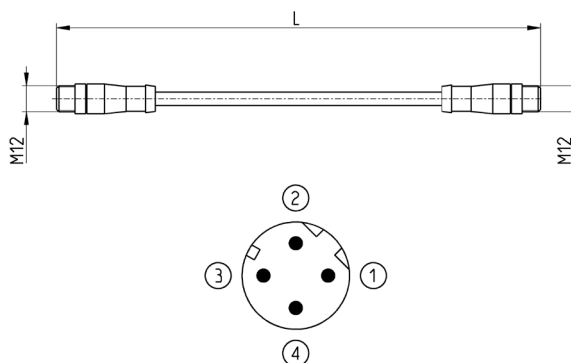
Mod.	Description	Type of connector	Connection
CS-DR04HB	Wiring	90°	M8 4 pin female

AIR TREATMENT

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Cable with straight connectors

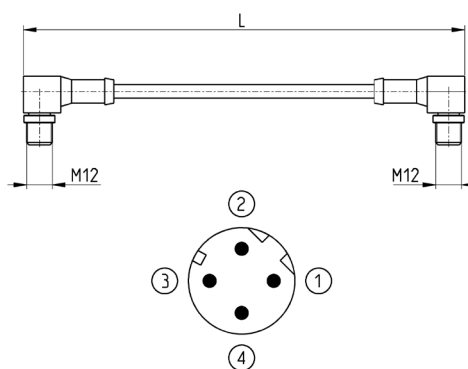
OPC UA e MQTT



Mod.	Description	Type of connector	Connection	Cable length [m]
CS-SB04HB-D100	Moulded cable	Straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	Moulded cable	Straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	Moulded cable	Straight	2x M12 D 4 pin male	10
CS-SB04HB-DD00	Moulded cable	Straight	2x M12 D 4 pin male	15
CS-SB04HB-DG00	Moulded cable	Straight	2x M12 D 4 pin male	20
CS-SB04HB-DJ00	Moulded cable	Straight	2x M12 D 4 pin male	25

Cable with 90° angular connectors

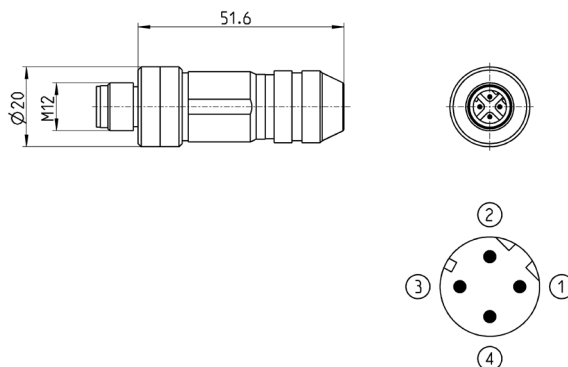
OPC UA e MQTT



Mod.	Description	Type of connector	Connection	Cable length [m]
CS-SC04HB-D100	Moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	Moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	Moulded cable	90°	2x M12 D 4 pin male	10
CS-SC04HB-DD00	Moulded cable	90°	2x M12 D 4 pin male	15
CS-SC04HB-DG00	Moulded cable	90°	2x M12 D 4 pin male	20
CS-SC04HB-DJ00	Moulded cable	90°	2x M12 D 4 pin male	25

Male wiring connector for Bus-IN and Bus-OUT

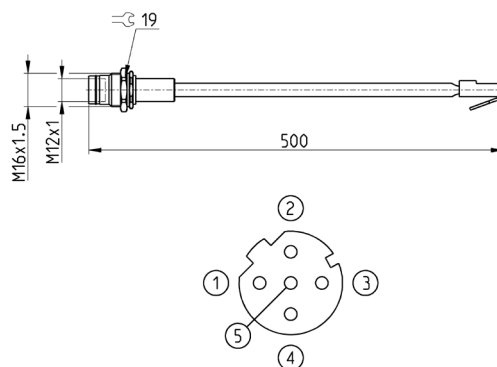
OPC UA e MQTT



Mod.	Description	Type of connector	Connection	Cable length [m]
CS-SM04H0	For metal wiring	Straight	M12 D 4 pin	-

Adapter and panel mount RJ45 to M12 D

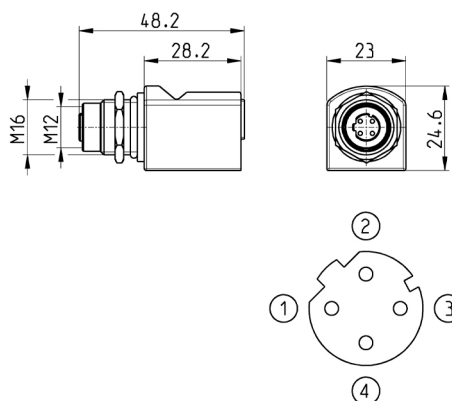
OPC UA e MQTT



Mod.	Description	Type of connector	Connection	Cable length [m]
CS-SE04HB-F050	Moulded cable	Straight	RJ45 male, M12 D 4 pin female - Pin 5 is not connected	0,5

Adapter RJ45 to M12 D, female

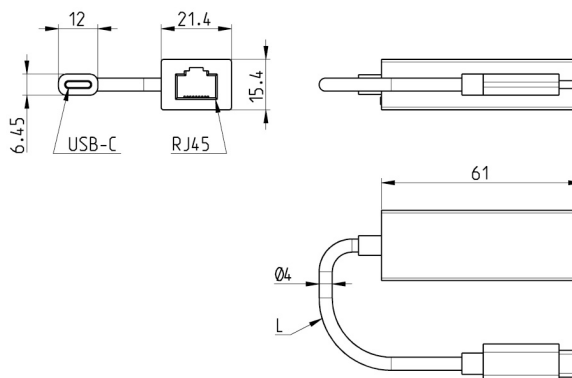
OPC UA e MQTT



Mod.	Description	Type of connector	Connection
CS-S004H0	Adapter	Straight	RJ45, M12 D 4 pin female

RJ45,USB-C Adapters

OPC UA e MQTT



Mod.

G24W-G25X-008

Rapid clamp kit



Materials:
Technopolymer clamp, NBR O-ring, zinc-plated steel nuts and screws.

Materials:
Technopolymer clamp, NBR O-ring, zinc-plated steel nuts and screws.

The MX2-X kit is supplied with:

- 1x Rapid clamp,
- 1x O-ring OR 3125 *;
- 2x Hexagonal nuts M5;
- 2x Screws M5x69.

The MX2-Z kit is supplied with:

- 1x Rapid clamp,
- 1x O-ring OR 3125 *;
- 1x Hexagonal nut M5;
- 1x Screw M5x69;
- 1x Screw M5x85 for wall fixing.

*It can be ordered separately (cod. 160-39-11/19).

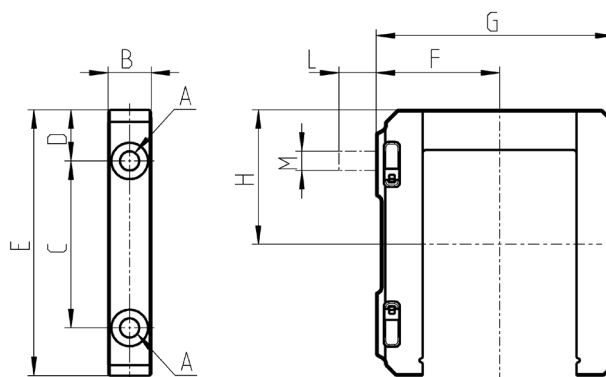
The MX3-X kit is supplied with:

- 1x Rapid clamp,
- 1x O-ring OR 38X2,8 **;
- 2x Square nuts M6;
- 2x Screws M6x75.

The MX3-Z kit is supplied with:

- 1x Rapid clamp,
- 1x O-ring OR 38X2,8 **;
- 1x Square nut M6,
- 1z Screw M6x75;
- 1x Screw M6x90 for wall fixing.

**It can be ordered separately (OR 38X2,8 NBR).



Mod.	A	B	C	D	E	F	G	H	L	M	Notes
MX2-X	5,2	12	46	14	73,5	37,5	70,5	37	-	-	
MX2-Z	5,2	12	46	14	73,5	37,5	70,5	37	14	M5	Kit with wall fixing screw
MX3-X	6,2	14	54	16,5	86	40	77	43,5	-	-	
MX3-Z	6,2	14	54	16,5	86	40	77	43,5	13	M6	Kit with wall fixing screw

Rapid clamp kit with wall fixing brackets



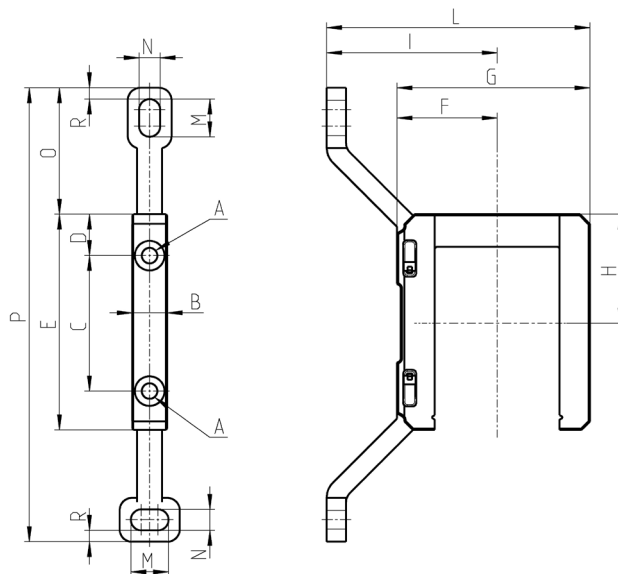
Materials:
 technopolymer clamp, NBR
 O-ring, zinc-plated steel
 nuts and screws.

The MX2-Y kit is supplied with:
 1x rapid wall clamp;
 1x O-ring OR 3125 **;
 2x hexagonal nuts;
 2x screws M5x69.

** It can be ordered separately (cod. 160-39-11/19).

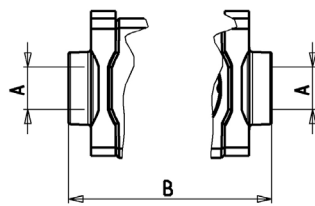
The kit MX3-Y is supplied with:
 1x wall rapid clamp;
 1x O-ring 38X2,8 **;
 2x square nuts M6;
 2x screws M6x75.

** It can be also separately ordered (OR 38X2,8 NBR).

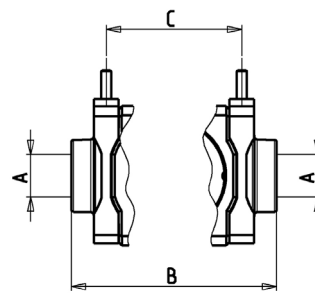


Mod.	A	B	C	D	E	F	G	H	I	L	M	N	O	P	R
MX2-Y	5,2	12	46	14	73,5	32,5	70,5	37	70,5	103	12	6,5	42	152	4
MX3-Y	6,2	14	54	16,5	86	40	77	43,5	68	105	15	8,4	50,5	181	4,5

Rapid clamps kit + flanges



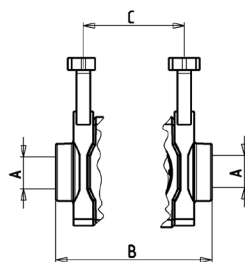
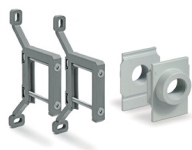
HH



JJ

Mod.	A	B	C	The kit is supplied with:
MX2-3/8-HH	G 3/8	174	-	1x MX2-3/8-FL + 2x MX2-X
MX2-1/2-HH	G 3/8	174	-	1x MX2-1/2-FL + 2x MX2-X
MX2-3/4-HH	G 3/4	174	-	1x MX2-3/4-FL + 2x MX2-X
MX2-3/8-JJ	G 3/8	174	140	1x MX2-3/8-FL + 2x MX2-Z
MX2-1/2-JJ	G 1/2	174	140	1x MX2-1/2-FL + 2x MX2-Z
MX2-3/4-JJ	G 3/4	174	140	1x MX2-3/4-FL + 2x MX2-Z
MX3-3/4-HH	G 3/4	221	-	1x MX3-3/4-FL + 2x MX3-X
MX3-1-HH	G 1	221	-	1x MX3-1-FL + 2x MX3-X
MX3-3/4-JJ	G 3/4	221	179	1x MX3-3/4-FL + 2x MX3-Z
MX3-1-JJ	G 1	221	179	1x MX3-1-FL + 2x MX3-Z

Rapid clamps kit with wall fixing brackets + flanges



KK

Mod.	A	B	C	The kit is supplied with:
MX2-3/8-KK	G 3/8	174	140	1x MX2-3/8-FL + 2x MX2-Y
MX2-1/2-KK	G 1/2	174	140	1x MX2-1/2-FL + 2x MX2-Y
MX2-3/4-KK	G 3/4	174	140	1x MX2-3/4-FL + 2x MX2-Y
MX3-3/4-KK	G 3/4	221	179	1x MX2-3/4-FL + 2x MX2-Y
MX3-1-KK	G 1	221	179	1x MX2-1-FL + 2x MX2-Y

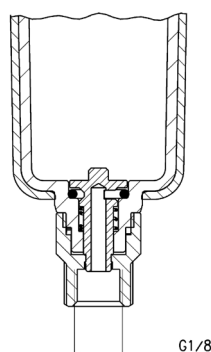
Semi-automatic manual drain Type 0



Functioning: with the operator mechanism turned clockwise, each time the pressure falls below 0,3 bar, the draining of condensate will be released; when resetting the pressure, the drain will close again.

The release can also be carried out manually; when the bowl is pressurised, the operator mechanism is pushed upwards.

Assembled with Filtering element 25µ

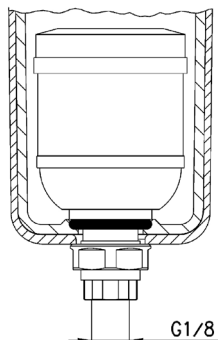


Mod. filter	Bowl with semiautomatic manual drain
MX2...-F	MX2-F2-P
MX3...-F	MX3-F2-P

Automatic drain (Type 3)



Functioning: the presence of liquid inside the bowl raises the float, thus opening the exhaust valve.



Assembled with **Filtering element 25 μ**

Mod. filter	Bowl with automatic drain
MX2...-F	MX2-F2/1-P
MX3...-F	MX3-F2/1-P

AIR TREATMENT

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Surface filters

Filters 25 μ m



Assembled with **Semi-automatic manual drain, Automatic drain**

Mod.	Materials
MX3-F7	PE (only for FSX3)
C238-F11/1	BR (only for FSX2)