

### DESCRIPTION

Magnetic sensors series "FM" allow to detect the magnetic piston position inside pneumatic cylinders. The magnetic field generated in the cylinder is used to signal electrical circuits as required. It's possible to choice between the two types of switches currently available:

- Reed switch (this electromechanical switch can work with both AC or DC circuits)
- Hall effect switch (electronic switch suitable for DC circuits only)

Magnetic sensors have a LED that signals the insertion as standard.

### NOTICE

The magnetic sensor is a switch that has to be assembled in series with a load (inductive, resistive or capacitive). Use the shortest possible connection cable to reduce self-capacitance to a minimum. In borderline cases, measures should be taken to cancel the effect of cable capacitance using a repetition relay (4 W) in series. Avoid close proximity to external magnetic fields such as electric motors or large iron masses, as they could effect the switch. The sensors are able to detect a magnetic signal at speeds of the piston up to 1 m/s.

## MAGNETIC SENSORS SERIES FM100

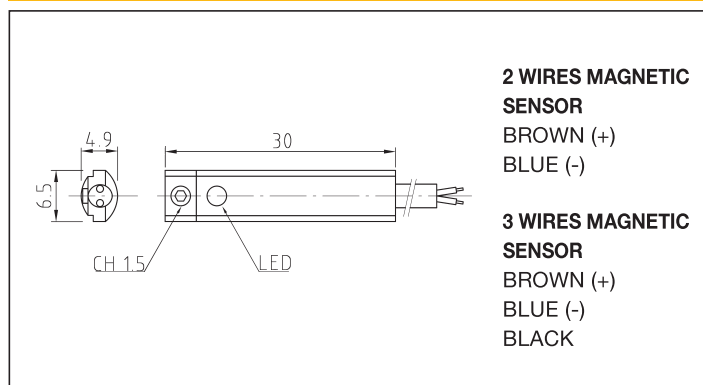
### TECHNICAL DATA

TYPE	FM100	FM100R	FM100N	FM100E	FM100EN
	FM100/C	FM100R/C	FM100N/C	FM100E/C	FM100EN/C
Working temperature	-10 ÷ +70 °C				
Protection class	IP 67				
Model	REED SWITCH			HALL EFFECT	
Contacts	N.O.		N.C.	PNP	NPN
Voltage AC/DC	5 ÷ 220 V	10 ÷ 30 VDC	5 ÷ 110 V	10 ÷ 30 V DC	
Max voltage drop	3 V	0.1 V	3 V	2 V	
Max exchange current	100 mA				
Max power	10 W			3 W	
Operating frequency	200 Hz			1000 Hz	

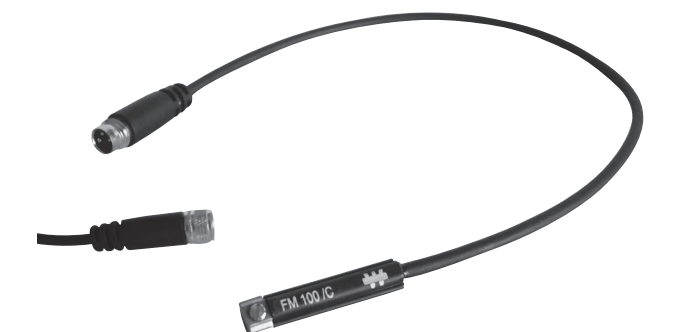
### MATERIALS

Body	Polyamide
Cable	Polyurethane
Connector	Polypropylene
Contacts	Gold-plated brass
Contact carrier	Nickel-plated brass
Ring nut	Brass

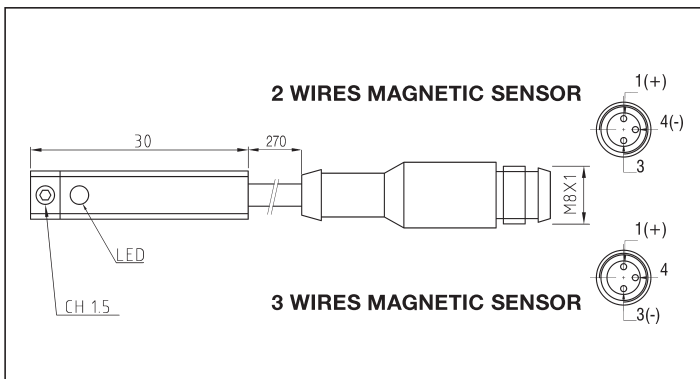
### FM100 - FM100R - FM100N - FM100E - FM100EN



DESCRIPTION	WEIGHT (g)	TYPE
N.O. reed switch with LED and 2 wires cable 3 m length	33	FM100
N.O. reed switch with LED and 3 wires cable 3 m length	33	FM100R
N.C. reed switch with LED and 2 wires cable 3 m length	33	FM100N
Hall effect switch version PNP with LED and 3 wires cable 3 m length	37	FM100E
Hall effect switch version NPN with LED and 3 wires cable 3 m length	37	FM100EN



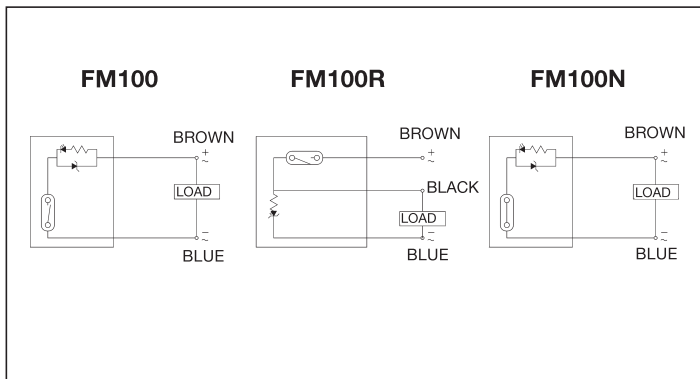
### FM100/C - FM100R/C - FM100N/C - FM100E/C - FM100EN/C



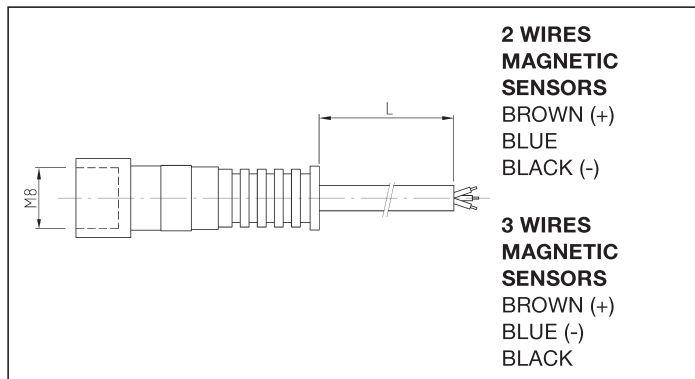
DESCRIPTION	WEIGHT (g)	TYPE
N.O. reed switch with LED and 2 wires ring nut connector M8	45	FM100/C
N.O. reed switch with LED and 3 wires ring nut connector M8	45	FM100R/C
N.C. reed switch with LED and 2 wires ring nut connector M8	45	FM100N/C
Hall effect switch version PNP with LED and 3 wires ring nut connector M8	49	FM100E/C
Hall effect switch version PNP with LED and 3 wires ring nut connector M8	49	FM100EN/C

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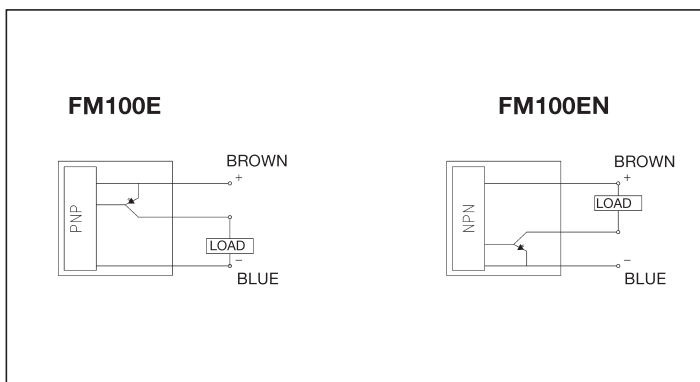
### ELECTRIC CIRCUITS REED SWITCH



### EXTENSION WITH FEMALE CONNECTOR M8

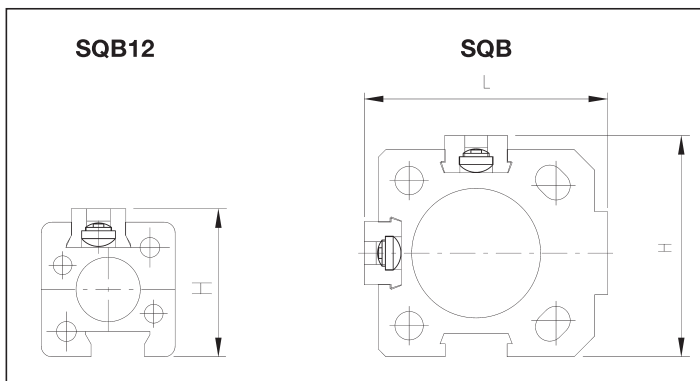


### ELECTRIC CIRCUITS HALL EFFECT SWITCH

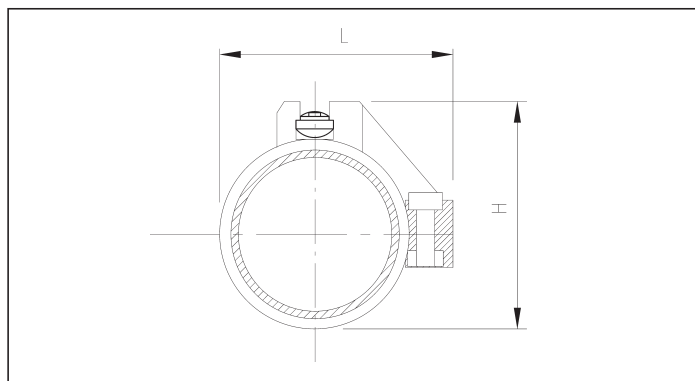


DESCRIPTION	WEIGHT (g)	L (m)	TYPE
Extension 3 m length with female connector M8	40	3	CNT3
Extension 5 m length with female connector M8	60	5	CNT5

### FIXING ADAPTER - PLASTIC - SQB12 - SQB



### FIXING ADAPTER - PLASTIC- FG



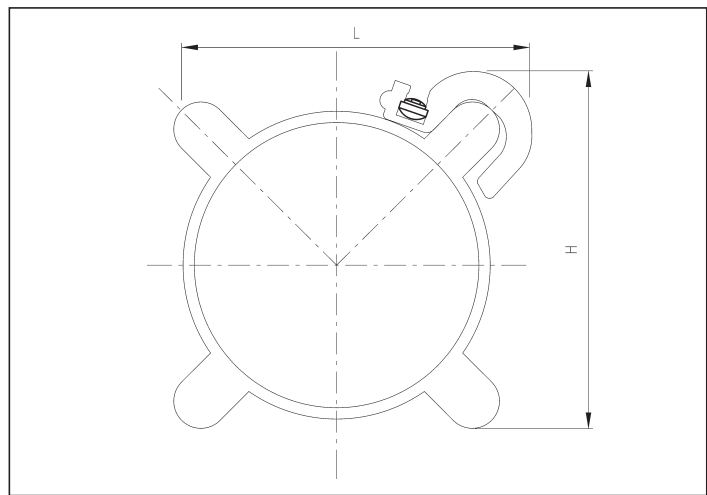
### MAXIMUM DIMENSIONS WITH CYLINDER SERIES "B"

H	L	Ø CYLINDER	TYPE
27	-	12	SQB12
32	36	16	SQB
37	41	20	
49	53	32	
58	61	40	
68	73	50	
81	89	63	
101	107	80	
124	132	100	

### MAXIMUM DIMENSIONS WITH CYLINDERS

H	L	CYLINDER SERIES and Ø			TYPE
		U	P	UP	
20	22	8	-	-	FG8
22	24	10	-	-	FG10
23	25	12	-	-	FG12
26	28	16	-	16	FG16
27	29	20	-	20	FG20
36	38	25	-	25	FG25
44	46	-	32	32	FG32
52	54	-	40	40	FG40
62	64	-	50	50	FG50
76	78	-	63	-	FG63

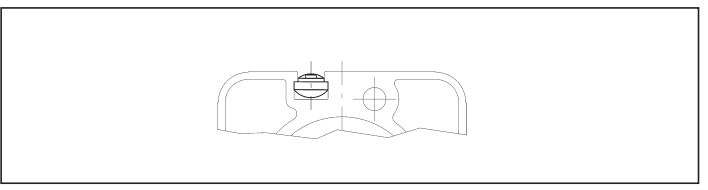
SENSOR FIXING BRACKETS - ALUMINIUM - FS



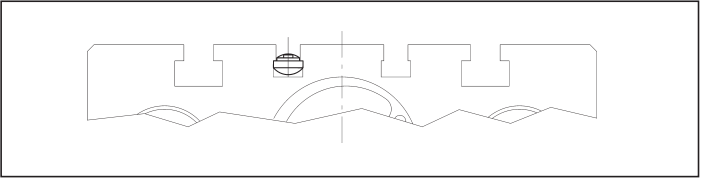
MAXIMUM DIMENSIONS WITH CYLINDERS

H	L	CYLINDER SERIES and Ø			TYPE
		CPUI	CPA	WR	
50	51	32	32	32	FS34
57	57	40	40	40	
69	69	50	50	50	FS56
79	79	63	63	63	
97	96	80	-	80	FS81
113	113	100	-	100	
140	141	125	-	125	FS125

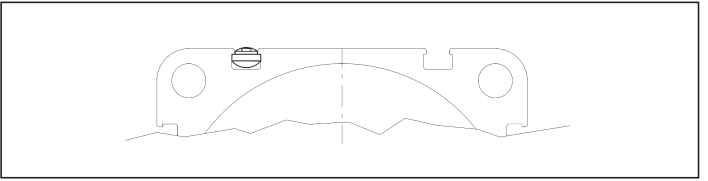
EXAMPLE OF SENSOR MOUNTING ON CYLINDERS SERIES "BU"



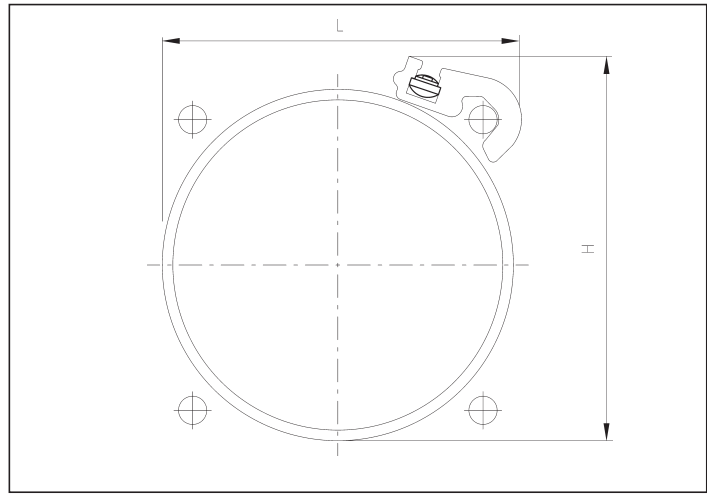
EXAMPLE OF SENSOR MOUNTING ON CYLINDERS SERIES "BG"



EXAMPLE OF SENSOR MOUNTING ON CYLINDERS SERIES "X"



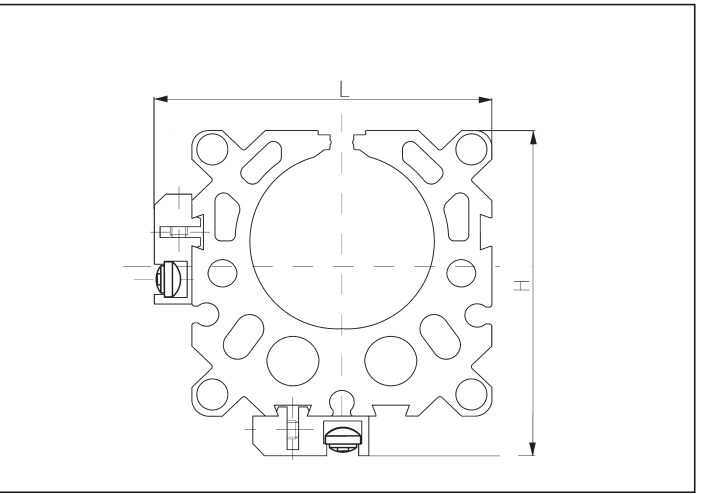
SENSOR FIXING BRACKETS WITH TIE RODS - ALUMINIUM - FS



MAXIMUM DIMENSIONS WITH CYLINDERS

H	L	SERIES CYLINDERS and Ø				TYPE
		WR	CPUI	CPU	CX	
45	46	-	-	32	32	FS345
52	53	-	-	40	40	
61	62	-	-	50	50	
76	75	-	-	63	63	
92	91	-	-	80	80	FS681
106	105	-	-	100	100	
144	141	125	125	-	125	FS112
170	173	-	160	-	160	
225	223	-	200	-	200	

SENSOR FIXING BRACKET - ALUMINIUM - SQZ



MAXIMUM DIMENSIONS WITH CYLINDERS SERIES "Z"

H	L	Ø CYLINDER	TYPE
36,5	36,6	18	SQZ
48,5	48,6	25	
58,5	58,6	32	
69,5	69,6	40	
84,5	84,6	50	
99,5	99,6	63	

P.S.: Sensor fixing bracket "SQZ" can not be fixed on the same side of the guides on the versions "ZSF" - "ZSFF" - "ZKF"; for this need use the "hidden" series FM101 (see page 1.96)