

# Series SA

#### General

The limit switches, or magnetic sensors, must be mounted on cylinders with magnetic piston.

These, when hit by the magnetic field generated by the piston as it approaches, close the circuit sending an electrical signal to relay, solenoid valve or converse with the controlling electronic system of the machine. There are both ampulla Reed and Hall effect magnetic sensor available. The sensors are attached to the cylinder by a proper clamp, slot or adapter and may have an activation LED indicator.

Note: The magnetic sensors are according to the Directive EMC 89/336/CEE and following amendments.

#### Instruction on how to use the sensors properly

Particular attention should be paid in order not to exceed the wide operating limits shown in the next pages. Besides, the 2 wires sensors have never to be connected to the mains if a load has not been yet connected in series. These are the only cares that, if not followed, may cause damages to the sensor. Besides, please consider that, while loading, the current absorbed by the sensors might be 50% higher that the rated one.

In case of direct current (DC) feeding, the polarity of the connection must be observed: the brown cable must be connected to the plus (+) and the blue one to the minus (-).

For all sensors, particular attention has to be paid to external factors (like, for example, nearby live cables, electromagnetic fields generated by electric motors, nearby metallic bodies, etc.) since they can affect the magnetic field generated by the magnet inside the piston and therefore causing malfunctions.

Electrical cable length must be kept below 10 meters in order to guarantee proper functioning.

If needed, 10 meters cable length can be exceeded; Pneumax suggests the use of an inductor or resistor in series to the load in order to reduce the capacitive behavior of the cable.

In this case, the customer is responsible for the selection of the inductor or resistor value. Pneumax assume no responsibility in case of malfunction.

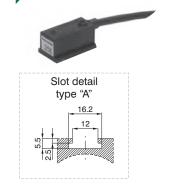
When using a two wire Reed type sensor always ensure that the correct load is applied in series on any of the two wires.

When using a sensor fitted with the SNAP connector pay attention to the orientation of the connector (see fig. page 6.6) because by inverting the connection the circuit will not be damaged, but the LED will not turn on. In case two or more sensors need to be connected in series, pay attention to the voltage drop generated (around 3V for each sensor), and, in case, use the version designed for in series connection.

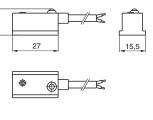
Hall effect sensors are longer lasting if compared to the Reed version since they do not include any moving mechanical part.

# Sensors with 2 wires cable (PUR Ø4,2 mm 2x0,34 mm<sup>2</sup>)

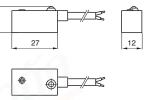
14,5



REED style versions, with 2m cable







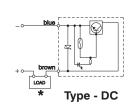
blu

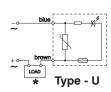
brow LOAD \*

**Diagrams and** connections

Type - AC

Ordering code				
Cylinders and	1500.AC	sensor for alternating current with led		
microbore cylinders	1500.DC	sensor for continuous current with led		
	1500. U	universal sensor with led		
	1500.U/1	universal sensor without led (REED ampulla only)		
Rodless cylinders	1600.AC	sensor for alternating current with led		
	1600.DC	sensor for continuous current with led		
	1600.U	universal sensor with led		
	1600.U/1	universal sensor without led (REED ampulla only)		







Type U/1

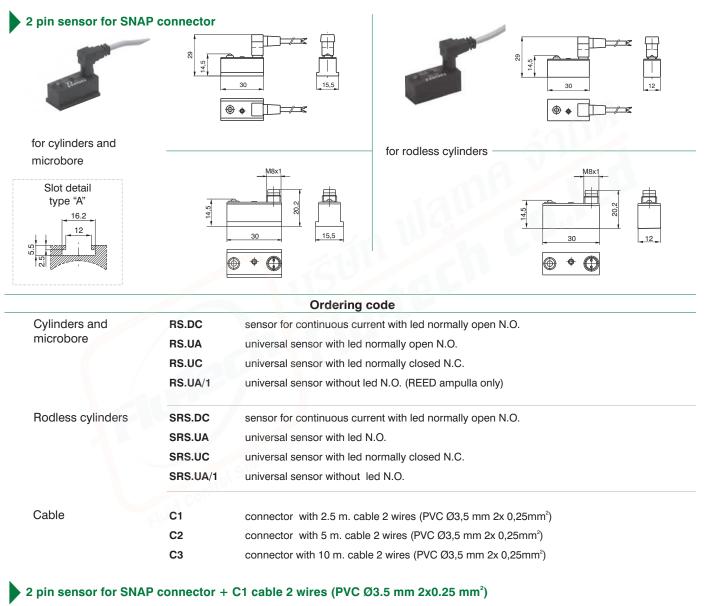
Technical characteristics	A.C.	DO	I	U		J/1
	A.C.	D.C.	a.c.	d.c.	a.c.	d.c.
Maximum permanent current	1,5A	1,2A	0,	5A	0,	ЗA
Maximum current (pulses of 0,5 sec.)	6A	1,5A	1	A	0,	8A
Voltage range	12 - 230V	12 - 30V	3 - 230V	12 - 48V	0 - 230V	0 - 48V
Maximum permanent power	375VA	32W	20VA	15W	10VA	8W
Working temperature				-20° C - 70°	С	
Maximum voltage drop	3V max	2V max	3V	max	(	V
Cable section				2x0,34 mn	n²	
				Ø4,2 mm P	UR	
Degree of protection				IP 65		
Connecting time	2 ms					
Disconnecting time	1 ms					
Average working period	10 <sup>7</sup> cicles					
Repetition of intervention point				± 0,1 mn	n	
Type of contact				N.O.		

# ★The load (LOAD) can be connected either to negative or positive pole.

# These sensors can be used on cylinders series:

SERIES	DESCRIPTION	MOUNTED
	for microbore with threaded end covers and "TECNO-MIR" microbore	with clamps code 1260.Ø.F
1200	for microbore "MIR" with rolled end covers, cylinders from Ø16 to Ø32	with clamps code 1280.Ø.F
	for microbore "MIR-INOX" with rolled end covers	with clamps code 1280.Ø.FX
	for cylinders from Ø32 to Ø63	with brackets code 1306.A
1306 - 1307 - 1308	for cylinders from Ø80 to Ø125	with brackets code 1306.B
	for cylinders from Ø160 to Ø200	with brackets code 1306.C
1315	for cylinders Ø250 and Ø320 (ISO)	with brackets code 1306.D
	for cylinders Ø32 and Ø40	with brackets code 1320.A
	for cylinders Ø50 and Ø63	with brackets code 1320.B
	for cylinders Ø80 and Ø100	with brackets code 1320.C
1319 - 1320	for cylinders Ø125	with brackets code 1320.D
	for cylinders Ø160	with brackets code 1320.E
	for cylinders Ø200	with brackets code 1320.F
	for cylinders ECOLIGHT Ø32 and Ø40	with brackets code 1390.A
	for cylinders ECOLIGHT Ø50 and Ø63	with brackets code 1390.B
1390 - 1391	for cylinders ECOLIGHT Ø80 and Ø100	with brackets code 1390.C
	for cylinders ECOLIGHT Ø125 - Ø200	with brackets code 1390.D
1500	Compact cylinders "Europe" (from Ø32)	directly on groove
1605	Rodless cylinders	with brackets code 1600.A





Cylinders and	RS.DCC1	sensor for DC current N.O. with LED and 2.5 m. cable
microbore	RS.UAC1	universal sensor with led N.O. with connector and 2.5 m. cable
	RS.UCC1	universal sensor with led N.C. with connector and 2.5 m. cable
	RS.UAC1/1	universal sensor without led N.O. with connector and 2.5 m. cable (REED ampulla only)
Rodless cylinders	SRS.DCC1	sensor for continuous current with led normally closed N.O. with connector and 2.5 m. cable
	SRS.UAC1	universal sensor with led N.O. with connector and 2.5 m. cable
	SRS.UCC1	universal sensor with led N.C. with connector and 2.5 m. cable
	SRS.UAC1/1	universal sensor without led N.O. with connector and 2.5 m. cable (REED ampulla only)

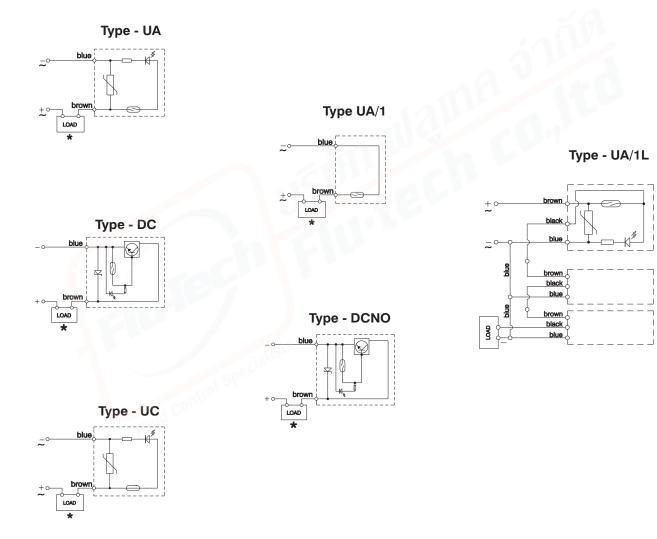
# 2 pin sensor with M8 connettor

Cylinders and	RS8.DC	sensor for DC current N.O. with LED and M8 plug
microbore	RS8.UA	universal sensor N.O. with LED and M8 plug
	RS8.UC	universal sensor N.C. with LED and M8 plug
Rodless cylinders	SRS8.DC	sensor for DC current N.O. with LED and M8 plug
	SRS8.UA	universal sensor N.O. with LED and M8 plug
	SRS8.UC	universal sensor N.C. with LED and M8 plug
Cable	MCH1	cable 3 wires I=2.5m with M8 connector three wires (PUR Ø2.6 mm 3x 0.15 mm²)
	MCH2	cable 3 wires I=5m with M8 connector three wires (PUR Ø2.6 mm 3x 0.15 mm²)
	МСНЗ	cable 3 wires I=10m with M8 connector three wires (PUR $Ø2.6 \text{ mm } 3x  0.15 \text{ mm}^2$ )

Cylinders and R	S.DCNO	sensor	for continu	Jous curren	t with led	normally c	pen N.O., ac	ccording	to standard	d IEC 94
microbore R	IS.UANO	univers	sal sensor	with led nor	mally ope	n N.O., ac	cording to s	tandard	IEC 947	
Cable C	:1NO	connector with 2.5 m. cable, according to standard IEC 947 (PVC Ø3.5 mm 2x0.25 mm <sup>2</sup> )								
C	2NO	conneo	ctor with 5	m. cable, a	according	to standar	d IEC 947 (F	VC Ø3.	5 mm 2x0.2	25 mm²)
C	3NO				-		rd IEC 947 (			
3 pin sensors for in series										
	IS.UA/1L				mally ope	n N.O., foi	series asse	mbly (3	wires)	
microbore – Rodless cylinders <b>S</b>	RS.UA/1L	univers	sal sensor	with led N.C	D., for serie	es assemt	oly (3 wires)	-		
Cable C	:H1	connec	ctor with 2.	5 m. cable	3 wires (P	VC Ø3.5 n	nm 3x0.25 m	nm²)		
C	H2	connec	ctor with 5	m. cable 3	wires (PV0	C Ø3.5 mn	n 3x0.25 mm	1 <sup>2</sup> )		
	НЗ						m 3x0.25 mi	,		
3 pin sensors for in series								,	25 mm²)	
	S.UACH1/1L						2.5 m. cable			a (3 wire
microbore								,		
Rodless cylinders S	RS.UACH1/1L	univers	al sensor v	vith led N.O.	with conn	ector and	2.5 m. cable,	, for serie	es assembly	(3 wires
microbore	188.UA/1L									
Rodiess cylinders 5	SRS8.UA/1L universal sensor N.O. with LED for in series assembling (3wires) and M8 plug									
Cabla		140						,		
	1CH1 1CH2			h 2.5 m. ca	ble 3 wire:	s (PUR Ø2	.6 mm 3x 0.	, 15 mm²)		
N	ICH2	M8 cor	nnector wit	h 2.5 m. ca h 5 m. cabl	ble 3 wires e 3 wires (	s (PUR Ø2 (PUR Ø2.6	.6 mm 3x 0.15	15 mm²) 5 mm²)		
N	1СН2 1СН3	M8 cor	nnector wit	h 2.5 m. ca h 5 m. cabl	ble 3 wires e 3 wires (	s (PUR Ø2 (PUR Ø2.6	.6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.1 For 2 wi	15 mm²) 5 mm²) 15 mm²) ires		
N For senso to IEC 94	<b>ICH2</b> ICH3 Irs according 17 Standard	M8 cor	nnector wit nnector wit F SNAP	h 2.5 m. ca h 5 m. cabl h 10 m. cab cor 3 wires 2 & M8 sens	ble 3 wires e 3 wires ( ble 3 wires sors	s (PUR Ø2 (PUR Ø2.6 s (PUR Ø2	6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.1 For 2 wi SNAP ser	15 mm²) 5 mm²) 15 mm²) ires nsors		
N N For senso to IEC 94 Connection Sensor Cor Sensor Cor 0 0 4 1 0 3 4 1 0 3 8 NAP code connector 3 0 4 1 0 2 NAP code connector 3 0 9 2 5 0 9 2 0 9 4 1 0 9 2 5 0 9 2 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	ACH2 ACH3 Pris according 47 Standard 7 Standard 7 Standard 1 Brown ( 4 Blue () 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUF	M8 cor M8 cor (+) d tots SNA SNA CH	P code connec 1 0 3.5 m 2 PVC	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires A M8 sens tion 3 wires Connector 4 1 4 3 consector 4 3 Consector 4 3 Consector 4 3	ble 3 wires e 3 wires ole 3 wires a print Black (signal Blue (-) black (-) bl	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.6 Ser ( ) ) ) ( 1 ( ) ) ) ( ) ) ( ) ) ( ) ( )	4.6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 For 2 wi SNAP ser connection 2 wi SNAP ser connection 2 wi SNAP ser connectors 2 wi 3 .5 mm PVC	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) ires nsors vires 2 Pl nector		
N N For senso to IEC 94 Connection Sensor ○ ○ ↓ ↓ ↓ ↓ SNAP code connector C1NO Ø 3.5 mm	ACH2 ACH3 brs according 47 Standard a 2 wires 3 PIN nector 4 1 Brown ( 4 Blue (-) 3 Not use s M8 code connect MC1 Ø 2.6 r	M8 cor M8 cor (+) d tots SNA SNA CH	P code connec 2 P code connec 2 P vode connec 2 P vode connec P vode connec 2 P vode connec	h 2.5 m. cal h 5 m. cabl h 10 m. cabl for 3 wires & M8 sens tion 3 wires Connector 4 1 4 3 *******************************	ble 3 wires e 3 wires oble 3 wires area 3 PIN Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup>	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.6 Ser ( ) ) ) ( 1 ( ) ) ) ( ) ) ( ) ) ( ) ( )	4.6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 For 2 wi SNAP ser onnection 2 wi SNAP ser onnection 2 wi Sov 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 16 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 19 mm <sup>2</sup> ) 10 mm <sup>2</sup> ) 1	N rown (+) lue (-)	A/4
N For senso to IEC 94 Connection Sensor Com Com Sensor Sensor Se	ACH2 ACH3 Pris according 47 Standard 7 2 wires 3 PIN 1 1 Brown ( 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUR	M8 cor M8 cor (+) d ctors SNA mm CH CH mm <sup>2</sup> CH	P code connec 1 0 3.5 m 2 PVC	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires A M8 sens tion 3 wires Connector 4 1 1 4 3 consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 3 Consector 4 Consecon 4 Consector 4 Consector 4 Consecon 10	ble 3 wires e 3 wires oble 3 wires area 3 PIN Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup>	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.6 Ser ( ) ) 1 ( ) ) ) 1 ( ) ) ( ) ) ) )	4.6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 For 2 wi SNAP ser connection 2 wi SNAP ser connection 2 wi SNAP ser connectors 2 wi 3 .5 mm PVC	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 16 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 19 mm <sup>2</sup> ) 10 mm <sup>2</sup> ) 1	N rown (+) lue (-)	4/1 d.c.
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N For senso to IEC 94 Connection Sensor Cor	ACH2 ACH3 Ars according 47 Standard 5 2 wires 3 PIN nnector 4 1 Brown ( 4 Blue (-) 3 Not use MC1 0 2.6 r MC2 0 PUF MC3 2x 0.15 D N. 1.2	M8 cor M8 cor (+) d ctors SNA mm CH CH CH CH CH CH CH CH	AP code connee 1 0 3.5 m P code connee 1 0 3.5 m PVC 3 3x 0.25 m AR AR AR AR AR AR AR AR AR AR	h 2.5 m. ca h 5 m. cabl h 10 m. cabl or 3 wires & M8 sens tion 3 wires Connector 4 1 1 4 3 3 ctors M8 com MCH1 MCH2 MCH3 U C. N.C. 0.3A	ble 3 wires e 3 wires oors 3 <i>PIN</i> Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.7 (PUR Ø2.7 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	Comm 3x 0.15 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 8 NAP ser onnection 2 w SNAP ser onnection 2 w SN	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 16 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 19 mm <sup>2</sup> ) 10 mm <sup>2</sup> ) 1	N rown (+) lue (-) a.c. N. 0.4	d.c. O. 5A
N   For senso to IEC 94   Connection   Sensor Correction   0 0   4 0   1 0   2x0 2x0.25 mm²	ACH2 ACH3 Ars according 47 Standard 5 2 wires 3 PIN 1 Brown ( 4 Blue (-) 3 Not use MC1 Ø 2.6 r MC2 Ø 2.6 r MC2 Ø 2.4 r MC2 D D N. 5 sec.) 1.5	M8 cor M8 cor (+) d ctors SNA mm CH Rm <sup>2</sup> CH C C O. 2A 5A	Annector with Annector with F SNAF Connec Sensor 0 4 0 3 NP code conner 1 2 9 0 3 3 0 4 0 3 0 4 0 3 0 0 1 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires & M8 sens tion 3 wires Connector 4 1 1 4 3 wCH1 MCH2 WCH3 U C. N.C. 0.3A 0.8A	ble 3 wires e 3 wires oors 3 PIN Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 (PUR Ø2.7 (C) (C) (C) (C) (C) (C) (C) (C) (C) (C)	Comm 3x 0.15 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 8 NAP ser 0 nnection 2 w SNAP ser 0 nnection 2 w 0 nne	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 16 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 19 mm <sup>2</sup> ) 10 mm <sup>2</sup> ) 1	N rown (+) lue (-) ue (-) uu (	d.c. O. 5A A
N   For senso to IEC 94   Connection Sensor   0   4   0   4   0   4   0   4   0   2x 0.25 mm²	ACH2 ACH3 prs according 47 Standard a 2 wires 3 PIN nector 4 Blue (-) 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUF MC3 2x 0.15 D N. 1.2 5 Sec.) 1.5	M8 cor M8 cor (+) d ctors SNA ch mm CH cH CH CH CH CH CH CH CH CH CH CH CH CH CH	Precede connector with the sector with the sec	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires & M8 sens tion 3 wires Connector 4 1 1 4 3 Connector MCH12 MCH3 U C. N.C. 0.3A 0.8A 3 - 110V	ble 3 wires e 3 wires oors 3 PIN Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A 12 -	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6 (PUR Ø2.6) (PUR Ø	Comm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 SNAP ser 5	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 16 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 19 mm <sup>2</sup> ) 19 mm <sup>2</sup> ) 10 mm <sup>2</sup> ) 1	N rown (+) lue (-)	d.c. O. 5A A 0 - 48\
N   For senso to IEC 94   Connection Sensor   O   O   4   1   3   SNAP code connectors   C1NO   2x 0.25 mm²	MCH2 MCH3 prs according 47 Standard a 2 wires 3 PIN 1 Brown ( 4 Blue (-) 3 Not use MC1 Ø 2.6 r MC2 Ø 2.6 r MC2 2 x 0.15 D N. 5 sec.) 1.5	M8 cor M8 cor (+) d ctors SNA ch mm CH cH CH CH CH CH CH CH CH CH CH CH CH CH CH	Annector with Annector with F SNAF Connec Sensor 0 4 0 3 NP code conner 1 2 9 0 3 3 0 4 0 3 0 4 0 3 0 0 1 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires & M8 sens tion 3 wires Connector 4 1 1 4 3 wCH1 MCH2 WCH3 U C. N.C. 0.3A 0.8A	ble 3 wires e 3 wires ors 3 PIN Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A 12 - 15W	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6	Comm 3x 0.15 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 8 NAP ser 0 nnection 2 w SNAP ser 0 nnection 2 w 0 nne	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 16 mm <sup>2</sup> ) 17 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 18 mm <sup>2</sup> ) 19 mm <sup>2</sup> ) 10 mm <sup>2</sup> ) 1	N rown (+) lue (-) ue (-) uu (	d.c. O. 5A A
N   For senso to IEC 94   Connection Sensor   O   O   4   1   2   0   4   1   2   0   4   1   2   0   4   1   2   0   3   SNAP code connector   0   4   1   2   2   0   2   0   2   0   2   0   2   0   2   0   2   0   2   0   1   0   1   1   2   1   1   1   1   1   2   1	ACH2 ACH3 prs according 47 Standard 7 Standard 7 Standard 7 Standard 1 Brown 4 Blue () 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUF MC3 2x 0.15 D N. 5 Sec.) 1.5 12 - 32	M8 cor M8 cor (+) d (+) d (+) C C C C C C C C C C C C C	Precede connector with the sector with the sec	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires A M8 sens tion 3 wires Connector 4 1 1 4 3 Connector MCH2 MCH3 U C. N.C. 0.3A 0.8A 3 - 110V 10VA	ble 3 wires e 3 wires ors 3 PIN Black (signal Blue (-) ble connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A 12 - 15W -20°C	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6 (PUR Ø2.6) (PUR Ø	Comm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 SNAP ser 5	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 10 mm <sup>2</sup> 10 mm <sup>2</sup> 1	N rown (+) lue (-) A.C. N. 0.: 1 0 - 250V 10VA	d.c. O. 5A A 0 - 48\
N   For senso to IEC 94   Connection Sensor   O   O   4   1   3   SNAP code connectors   C1NO   2x 0.25 mm²	ACH2 ACH3 prs according 47 Standard a 2 wires 3 PIN nector 4 Blue (-) 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUF MC3 2x 0.15 D N. 1.2 5 Sec.) 1.5	M8 cor M8 cor (+) d (+) d (+) C C C C C C C C C C C C C	Precede connector with the sector with the sec	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires & M8 sens tion 3 wires Connector 4 1 1 4 3 Connector MCH12 MCH3 U C. N.C. 0.3A 0.8A 3 - 110V	ble 3 wires e 3 wires ors 3 PIN Black (signal Blue (-) ble connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A 12 - 15W -20°C	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6	Comm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 SNAP ser 5	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 10 mm <sup>2</sup> 10 mm <sup>2</sup> 1	N rown (+) lue (-)	d.c. O. 5A A 0 - 48\ 8W
N   For senso to IEC 94   Connection   Sensor   O<	ACH2 ACH3 prs according 47 Standard 7 Standard 7 Standard 7 Standard 1 Brown 4 Blue () 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUF MC3 2x 0.15 D N. 5 Sec.) 1.5 12 - 32	M8 cor M8 cor (+) d (+) d (+) C C C C C C C C C C C C C	Precede connector with the sector with the sec	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires connector 4 1 1 4 3 ctors M8 con MCH2 MCH3 U c. N.C. 0.3A 0.8A 3 - 110V 10VA	ble 3 wires e 3 wires ors 3 PIN Brown (+) Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A 12 - 15W -20°C	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	.6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 For 2 wi SNAP ser connection 2 wi SNAP ser connection 2 wi SO 3 S.5 mm PVC x 0.25 mm <sup>2</sup> UA/ a.c. N.C 0.55 1A 244 20VA	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 10 mm <sup>2</sup> 10 mm <sup>2</sup> 1	N rown (+) lue (-) Jue	d.c. O. 5A A 0 - 48\ 8W
SNAP code connection   SNAP code connector   SNAP code connector   SNAP code connector   C2NO   2x 0.25 mm²	ACH2 ACH3 prs according 47 Standard 7 Standard 7 Standard 7 Standard 1 Brown 4 Blue () 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUF MC3 2x 0.15 D N. 5 Sec.) 1.5 12 - 32	M8 cor M8 cor (+) d (+) d (+) C C C C C C C C C C C C C	Precede connector with the sector with the sec	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires connector 4 1 1 4 3 ctors M8 con MCH2 MCH3 U c. N.C. 0.3A 0.8A 3 - 110V 10VA	ble 3 wires e 3 wires oors 3 PIN Brown (+) Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A 12 - 15W -20°C 3V	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6 (PUR Ø2.6) (PUR Ø2.6	.6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 For 2 wi SNAP ser connection 2 wi SNAP ser connection 2 wi SO 3 S.5 mm PVC x 0.25 mm <sup>2</sup> UA/ a.c. N.C 0.55 1A 244 20VA	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 10 mm <sup>2</sup> 10 mm <sup>2</sup> 1	N rown (+) lue (-) lue (-)	d.c. O. 5A A 0 - 48\ 8W
N   For senso to IEC 94   Connection Sensor   Image: Shape code connectors Image: Shape code code code code code code code cod	ACH2 ACH3 prs according 47 Standard 7 Standard 7 Standard 7 Standard 1 Brown 4 Blue () 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUF MC3 2x 0.15 D N. 5 Sec.) 1.5 12 - 32	M8 cor M8 cor (+) d (+) d (+) C C C C C C C C C C C C C	Precede connector with the sector with the sec	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires connector 4 1 1 4 3 ctors M8 con MCH2 MCH3 U c. N.C. 0.3A 0.8A 3 - 110V 10VA	ble 3 wires e 3 wires oors 3 PIN Brown (+) Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A 12 - 15W -20°C 3V	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 ) 10 10 10 10 10 10 10 10 10 10 10 10 10	.6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 For 2 wi SNAP ser connection 2 wi SNAP ser connection 2 wi SO 3 S.5 mm PVC x 0.25 mm <sup>2</sup> UA/ a.c. N.C 0.55 1A 244 20VA	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 10 mm <sup>2</sup> 10 mm <sup>2</sup> 1	N rown (+) lue (-) lue (-)	d.c. O. 5A A 0 - 48\ 8W
N   For senso to IEC 94   Connection   Sensor   O<	ACH2 ACH3 prs according 47 Standard 7 Standard 7 Standard 7 Standard 1 Brown 4 Blue () 3 Not use M8 code connect MC1 Ø 2.6 r MC2 PUF MC3 2x 0.15 D N. 5 Sec.) 1.5 12 - 32	M8 cor M8 cor (+) d (+) d (+) C C C C C C C C C C C C C	Precede connector with the sector with the sec	h 2.5 m. ca h 5 m. cabl h 10 m. cabl for 3 wires connector 4 1 1 4 3 ctors M8 con MCH2 MCH3 U c. N.C. 0.3A 0.8A 3 - 110V 10VA	ble 3 wires e 3 wires oors 3 PIN Black (signal Blue (-) de connectors Ø 2.6 mm PUR 3x 0.15 mm <sup>2</sup> A d. N.O. 0.5A 1A 12 - 15W -20°C 3V	s (PUR Ø2 (PUR Ø2.6 (PUR Ø2.6 (PUR Ø2.7 ) 10 10 10 10 10 10 10 10 10 10 10 10 10	.6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 6 mm 3x 0.15 7 For 2 wi SNAP ser connection 2 wi SNAP ser connection 2 wi SO 3 S.5 mm PVC x 0.25 mm <sup>2</sup> UA/ a.c. N.C 0.55 1A 244 20VA	15 mm <sup>2</sup> ) 5 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 15 mm <sup>2</sup> ) 10 mm <sup>2</sup> 10 mm <sup>2</sup> 1	N rown (+) lue (-) lue (-)	d.c. O. 5A A 0 - 48 <sup>1</sup> 8W



# Diagrams and connections

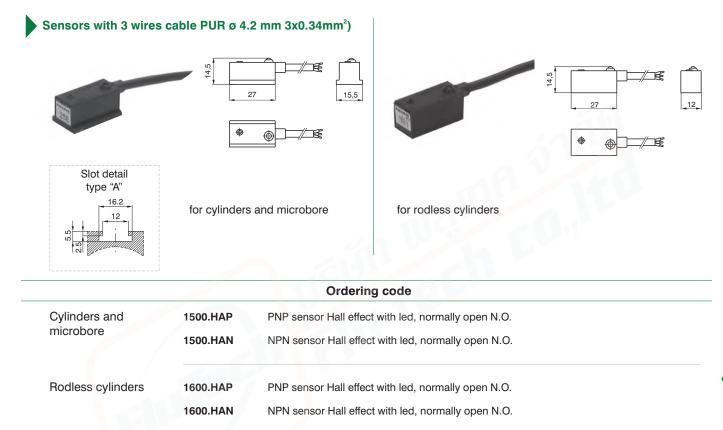


### **★**The load (LOAD) can be connected either to negative or positive pole.

#### These sensors can be used on cylinders series:

SERIES	DESCRIPTION	MOUNTED
	for microbore with threaded end covers and "TECNO-MIR" microbore	with clamps code 1260.Ø.F
1200	for microbore "MIR" with rolled end covers, cylinders from Ø16 to Ø32	with clamps code 1280.Ø.F
	for microbore "MIR-INOX" with rolled end covers	with clamps code 1280.Ø.FX
	for cylinders from Ø32 to Ø63	with brackets code 1306.A
1306 - 1307 - 1308	for cylinders from Ø80 to Ø125	with brackets code 1306.B
	for cylinders from Ø160 to Ø200	with brackets code 1306.C
1315	for cylinders Ø250 and Ø320 (ISO)	with brackets code 1306.D
	for cylinders Ø32 and Ø40	with brackets code 1320.A
	for cylinders Ø50 and Ø63	with brackets code 1320.B
	for cylinders Ø80 and Ø100	with brackets code 1320.C
1319 - 1320	for cylinders Ø125	with brackets code 1320.D
	for cylinders Ø160	with brackets code 1320.E
	for cylinders Ø200	with brackets code 1320.F
	for cylinders ECOLIGHT Ø32 and Ø40	with brackets code 1390.A
	for cylinders ECOLIGHT Ø50 and Ø63	with brackets code 1390.B
1390 - 1391	for cylinders ECOLIGHT Ø80 and Ø100	with brackets code 1390.C
	for cylinders ECOLIGHT Ø125 - Ø200	with brackets code 1390.D
1500	Compact cylinders "Europe" (from Ø32)	directly on groove
1605	Rodless cylinders	with brackets code 1600.A

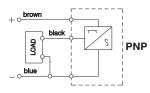


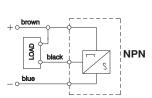


#### **Technical characteristics**

0.5A
10 - 30V DC
10W
2V
-20°C - 70°C
PUR 4.2mm
3x0.34 mm <sup>2</sup>
IP 65
0.8 µs
0.3 µs
10° cicles
± 0.1 mm
N.O.

# **Diagrams and connections**



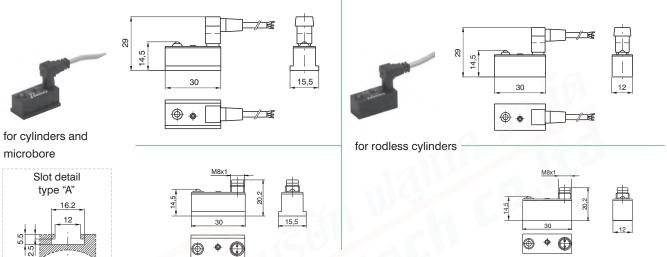


#### These sensors can be used on cylinders series:

SERIES	DESCRIPTION	MOUNTED
	for microbore with threaded end covers and "TECNO-MIR" microbore	with clamps code 1260.Ø.F
1200	for microbore "MIR" with rolled end covers, cylinders from Ø16 to Ø32	with clamps code 1280.Ø.F
	for microbore "MIR-INOX" with rolled end covers	with clamps code 1280.Ø.FX
	for cylinders from Ø32 to Ø63	with brackets code 1306.A
1306 - 1307 - 1308	for cylinders from Ø80 to Ø125	with brackets code 1306.B
	for cylinders from Ø160 to Ø200	with brackets code 1306.C
1315	for cylinders Ø250 and Ø320 (ISO)	with brackets code 1306.D
	for cylinders Ø32 and Ø40	with brackets code 1320.A
	for cylinders Ø50 and Ø63	with brackets code 1320.B
	for cylinders Ø80 and Ø100	with brackets code 1320.C
1319 - 1320	for cylinders Ø125	with brackets code 1320.D
	for cylinders Ø160	with brackets code 1320.E
	for cylinders Ø200	with brackets code 1320.F
	for cylinders ECOLIGHT Ø32 and Ø40	with brackets code 1390.A
	for cylinders ECOLIGHT Ø50 and Ø63	with brackets code 1390.B
1390 - 1391	for cylinders ECOLIGHT Ø80 and Ø100	with brackets code 1390.C
	for cylinders ECOLIGHT Ø125 - Ø200	with brackets code 1390.D
1500	Compact cylinders "Europe" (from Ø32)	directly on groove
1605	Rodless cylinders	with brackets code 1600.A

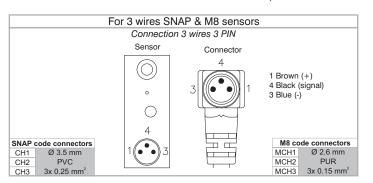






	/	Ordering code
Cylinders and nicrocylinders	HS.PA	PNP sensor Hall effect with led, normally open N.O.
Rodless cylinders	SHS.PA	PNP sensor Hall effect with led, normally open N.O.
Cable	CH1	connector with 2.5 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm²)
	CH2	connector with 5 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> )
	0110	$(\mathbf{P}) (\mathbf{C} \mathbf{Q}) = \mathbf{C} \mathbf{Q} \mathbf{Q}$
	CH3	connector with 10 m. cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> )
PIN sensor for SNA Cylinders and microbore	COPU	CH1 cable 3 wires (PVC Ø3.5 mm 3x0.25 mm <sup>2</sup> ) PNP sensor Hall effect N.O. with led, with connector and 2.5 m. cable
Cylinders and	AP connector +	CH1 cable 3 wires (PVC ø3.5 mm 3x0.25 mm²)
Cylinders and microbore	AP connector + HS.PAC1 SHS.PAC1	CH1 cable 3 wires (PVC ø3.5 mm 3x0.25 mm²) PNP sensor Hall effect N.O. with led, with connector and 2.5 m. cable
Cylinders and microbore Rodless cylinders	AP connector + HS.PAC1 SHS.PAC1	CH1 cable 3 wires (PVC ø3.5 mm 3x0.25 mm²) PNP sensor Hall effect N.O. with led, with connector and 2.5 m. cable

Rodless cylinders	SHS8.NA	NPN Hall effect sensor N.O. with LED and M8 plug
	SHS8.PA	PNP Hall effect sensor N.O. with LED and M8 plug
Cable	MCH1	M8 connector with cable 2.5 m. 3 wires (PUR Ø2.6 mm 3x0.15mm <sup>2</sup> )
	MCH2	M8 connector with cable 5 m. 3 wires (PUR Ø2.6 mm 3x0.15mm²)
	МСНЗ	M8 connector with cable 10 m. 3 wires (PUR Ø2.6 mm 3x0.15mm <sup>2</sup> )



#### **Technical characteristic**

Maximum permanent current	0,25A
Voltage range	6 - 30V DC
Power (inductive load)	6W
Maximum Voltage drop	2V
Working temperature	-20°C - 70°C
Cables number	3
Degree of protection	IP 65
Connecting time	0,8 ms
Disconnecting time	0,3 ms
Average working period	10° cicles
Repetition of intervention point	± 0,1 mm
Contact normally open	N.O.

#### These sensors can be used on cylinders series:

#### SERIES DESCRIPTION MOUNTED for microbore with threaded end covers and "TECNO-MIR" microbore with clamps code 1260.Ø.F 1200 for microbore "MIR" with rolled end covers, cylinders from Ø16 to Ø32 with clamps code 1280.Ø.F for microbore "MIR-INOX" with rolled end covers with clamps code 1280.Ø.FX for cylinders from Ø32 to Ø63 with brackets code 1306.A 1306 - 1307 - 1308 for cylinders from Ø80 to Ø125 with brackets code 1306.B for cylinders from Ø160 to Ø200 with brackets code 1306.C 1315 for cylinders Ø250 and Ø320 (ISO) with brackets code 1306.D for cylinders Ø32 and Ø40 with brackets code 1320.A for cylinders Ø50 and Ø63 with brackets code 1320.B for cylinders Ø80 and Ø100 with brackets code 1320.C 1319 - 1320 for cylinders Ø125 with brackets code 1320.D for cylinders Ø160 with brackets code 1320.E for cylinders Ø200 with brackets code 1320.F for cylinders ECOLIGHT Ø32 and Ø40 with brackets code 1390.A for cylinders ECOLIGHT Ø50 and Ø63 with brackets code 1390.B 1390 - 1391 for cylinders ECOLIGHT Ø80 and Ø100 with brackets code 1390.C for cylinders ECOLIGHT Ø125 - Ø200 with brackets code 1390.D 1500 directly on groove Compact cylinders "Europe" (from Ø32) with brackets code 1600.A 1605 Rodless cylinders

FLU-TECH CO.,LTD

Flu:Tec

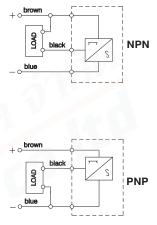
บริษัท ฟลูเทค จำกัด 845/3-4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270

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**Magnetic sensors** 

**Series SA** 

#### **Diagrams and connections**



PNEUMATIC ACTUATION