



Series SA

The limit switches of magnetic sensors must be mounted on cylinders fitted with magnetic pistons.

These, are activated by the magnetic field generated by the magnetic piston as it approaches and closes the circuit sending an electrical signal to either a relay, solenoid valve or converses with the electrical control system of the machine. There are both ampulla or Hall effect magnetic sensors available which are attached to the cylinder using a suitable cylinder clamp/adaptor or mounted in a suitable slot on the cylinder. The switch may also include an activation LED indicator.

Note: The magnetic sensors are in accordance with the **Directive 2014/30/EU** and following amendments

Instruction on how to use the sensors

Particular attention needs to be paid to ensure that you do not exceed the operating characteristics shown in the following pages. Its important to note; 2 wire sensors should not be connected to the supply voltage if a load is not connected in series. Failure to do so may result in damage to the sensor. Furthermore, please consider that the 'inrush' (loading) current absorbed by the sensors might be up to 50% higher than rated.

For direct currents (DC), The polarity of the connection must be observed: The brown cable must be connected to the live (+) and the blue wire connected to the negative (-).

For all sensor applications, particular attention must be paid to the external factors such as nearby live cables, electromagnetic fields generated by electric motors as well as nearby metallic bodies as these can affect the magnetic field generated by the magnetic piston which in turn can cause malfunctions.

Electrical cables must be kept below 10mtrs in length to guarantee correct function, however, if a 10 mtr length cable is required, Pneumax suggests the inclusion of an inductor or resistor to the load to reduce the capacitive behaviour of the cable. In this instance, the customer is responsible for the selection of the correct resistive or inductive load required as Pneumax accept no responsibility for any malfunction.

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 2-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 a SNAP connector always pay attention to the orientation of the connector because by inverting the connection the circuit will not be damaged, however, the LED will not illuminate. In case 2 or more sensors need to be connected in series, pay attention to the voltage drop generated (approx 3v per sensor), in this instance, use the version designed for series connection.

Hall effect sensors are longer lasting if compare to reed switched as they do not include any moving parts.



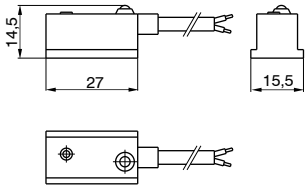
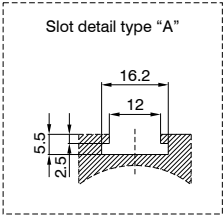
Cable sensor

Coding: 1T00.V

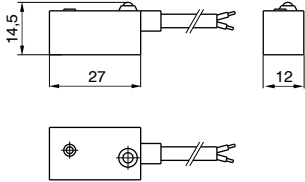
Technical characteristics	A.C.	D.C.	U		U/1	
			A.C.	D.C.	A.C.	D.C.
Permanent maximum current	1,5A	1,2A	0,5A		0,3A	
Maximum current (0.5 sec. pulses)	6A	1,5A	1A		0,8A	
Voltage field	12 ... 230V	12 ... 30V	3 ... 230V	12 ... 48V	0 ... 230V	0 ... 48V
Permanent maximum power	375VA	32W	20VA	15W	10VA	8W
Working temperature	-20°C ... 70°C					
Maximum voltage drop	3V max	2V max	3V max		0V	
Cable length	2m					
Cable colour	Black					
External cable section	Ø4,2mm					
Cover material	PUR					
Number of wires in the cable	2					
Wires section	0,34 mm²					
Connection type	With cable without connector					
Protection degree	IP65					
Switch-on time	2 ms					
Switch-off time	1 ms					
Average working time	10⁶cycles					
Repetition of intervention point	± 0,1 mm					
Contact type	N.O.					
Directive	CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091					
Fixing	With screw					
Weight	50g					
With LED indication	With LED				Without LED	
LED color	Red				/	

TYPE	5 = Cylinders and microcylinders. Slot detail type "A".
6 = Rodless cylinders	
VERSION	AC = For alternating current
DC = For continuous current	
U = Universal	
U/1 = Universal sensor (REED ampulla only)	

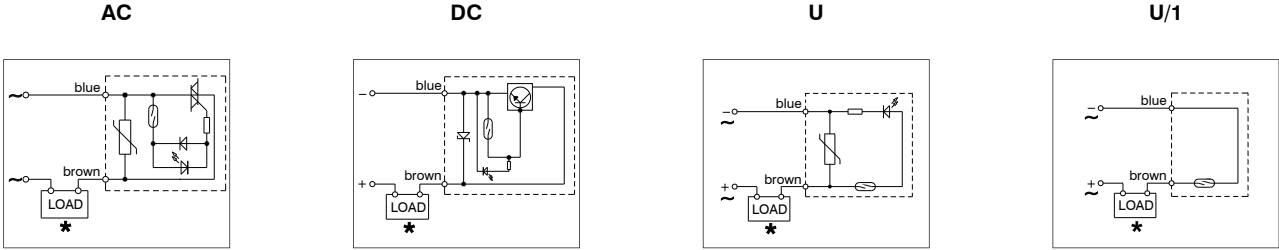
Cylinders and microcylinders



Rodless cylinders



Diagrams and connections



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



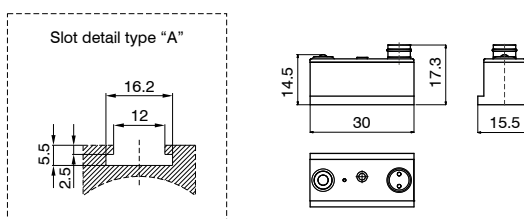
Sensor for SNAP connector

Coding: **T**RS.**V**

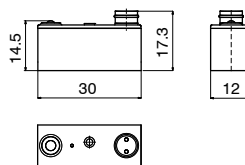
Technical characteristics	DC	UA		UC		UA/1	
		A.C.	D.C.	A.C.	D.C.	A.C.	D.C.
Contact type	N.O.	N.O.		N.C.		N.O.	
Permanent maximum current	1.2A	0.5A		0.3A		0.5A	
Maximum current (0.5 sec. pulses)	1.5A	1A		0.8A		1A	
Voltage field	12 ... 30V	3 ... 250V	12 ... 48V	3 ... 110V	12 ... 48V	0 ... 250V	0 ... 48V
Permanent maximum power	32W	20VA	15W	10VA	8W	10VA	8W
Working temperature	-20°C ... 70°C						
Maximum voltage drop	2V	<3V				0V	
Connection type	With cable and connector						
Protection degree	IP65						
Switch-on time	2 ms						
Switch-off time	1 ms						
Average working time	10 ⁷ cycles						
Repetition of intervention point	± 0,1 mm						
Directive	CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091						
Fixing	With screw						
Weight	7g						
With LED indication	With LED					Without LED	
LED color	Red						

T	TYPE
	= Cylinders and microcylinders. Slot detail type "A".
	S = Rodless cylinders
V	VERSION
	DC = For continuous current
	UA = Universal sensor N.O.
	UC = Universal sensor N.C.
	UA/1 = Universal sensor N.O. Without LED

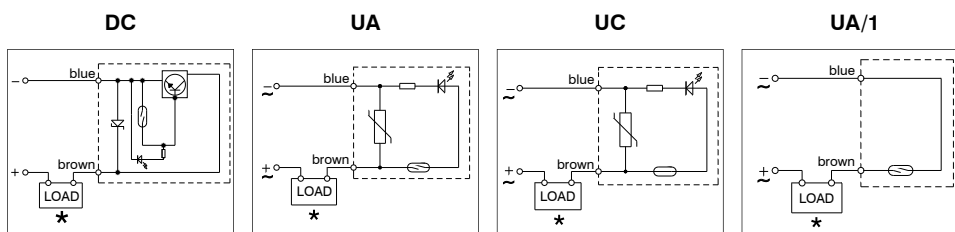
Cylinders and microcylinders



Rodless cylinders

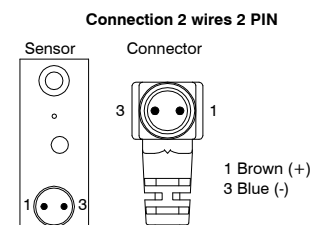


Diagrams and connections



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

Technical data



Sensor + Cable

Coding: **T**RS.**V****L**



T	TYPE
	= Cylinders and microcylinders. Slot detail type "A".
	S = Rodless cylinders
V	VERSION
	DC = For continuous current
	UA = Universal sensor N.O.
	UC = Universal sensor N.C.
	UAC = Universal sensor N.O. Without LED
L	CABLE LENGTH (DC, UA, UC)
	C1 = 2,5 m cable
	C2 = 5 m cable
	C3 = 10 m cable
L	CABLE LENGTH (UAC)
	1/1 = 2,5 m cable
	2/1 = 5 m cable
	3/1 = 10 m cable

2-wire cable connector

Coding: **C****L**



Technical characteristics	C1	C2	C3
Cable colour	Light grey		
External cable section	Ø3,5mm		
Cover material	PVC		
Number of wires in the cable	2 wires		
Wires section	0,25 mm²		

L	CABLE LENGTH
	1 = 2,5 m 2-wire cable
	2 = 5 m 2-wire cable
	3 = 10 m 2-wire cable



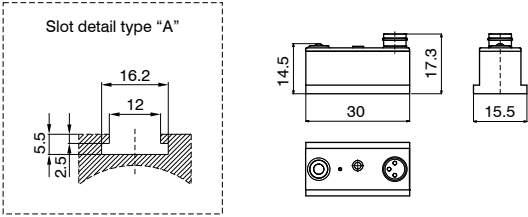
3-pin sensor with SNAP connector for series assembling

Coding: **1**RS.UA/1L

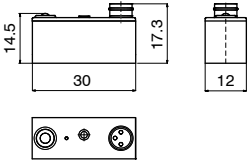
Technical characteristics	UA/1L	
	A.C.	D.C.
Permanent maximum current	0.5A	
Maximum current (0.5 sec. pulses)	1A	
Voltage field	24V	
Permanent maximum power	20VA	15W
Working temperature	-20°C ... 70°C	
Maximum voltage drop	0V	
Connection type	With cable and connector	
Protection degree	IP65	
Switch-on time	2 ms	
Switch-off time	1 ms	
Average working time	10 ⁷ cycles	
Repetition of intervention point	± 0,1 mm	
Contact type	N.O.	
Directive	CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091	
Fixing	With screw	
Weight	7g	
With LED indication	With LED	
LED color	Red	

TYPE
1 = Cylinders and microcylinders. Slot detail type "A".
S = Rodless cylinders

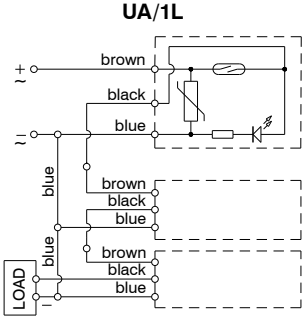
Cylinders and microcylinders



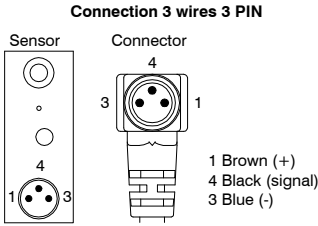
Rodless cylinders



Diagrams and connections



Technical data



Sensor + Cable

Coding: **1**RS.UA**L**/1L



TYPE
1 = Cylinders and microcylinders. Slot detail type "A".
S = Rodless cylinders
CABLE LENGTH
L CH1 = 2,5 m cable
CH2 = 5 m cable
CH3 = 10 m cable

Connector with 3 wires cable

Coding: **CH****L**



Technical characteristics	CH1	CH2	CH3
Cable colour	Light grey		
External cable section	Ø3,5mm		
Cover material	PVC		
Number of wires in the cable	3 wires		
Wires section	0,25 mm ²		

CABLE LENGTH
L 1 = 2,5 m cable
2 = 5 m cable
3 = 10 m cable



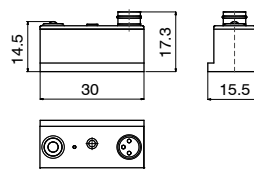
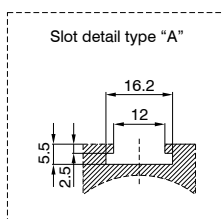
3 pin sensor in according to IEC 947 directives

Coding: RS.

Technical characteristics	DCNO			UANO		
	DC			A.C.		
Contact type				N.O.		
Permanent maximum current	1.2A			0.5A		
Maximum current (0.5 sec. pulses)	1.5A			1A		
Voltage field	12 ... 30V			3 ... 250V		
Permanent maximum power	32W			20VA		
Working temperature				-20°C ... 70°C		
Maximum voltage drop	2V			<3V		
Connection type				With cable and connector		
Protection degree				IP65		
Switch-on time				2 ms		
Switch-off time				1 ms		
Average working time				10 ⁶ cycles		
Repetition of intervention point				± 0,1 mm		
Directive				CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091		
Fixing				With screw		
Weight				7g		
With LED indication				With LED		
LED color	Red			Yellow		

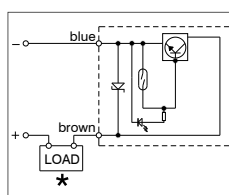
VERSION
DCNO = Continuous current N.O.
UANO = Universal sensor N.O.

Cylinders and microcylinders

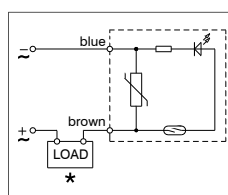


Diagrams and connections

DCNO



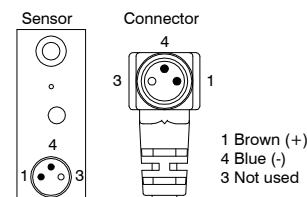
UANO



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

Technical data

Connection 2 wires 3 PIN



Technical characteristics	C1NO	C2NO	C3NO
Cable colour	Light grey		
External cable section	Ø3,5mm		
Cover material	PVC		
Number of wires in the cable	2 wires		
Wires section	0,25 mm ²		

Coding: C NO

CABLE LENGTH
1 = 2,5 m cable
2 = 5 m cable
3 = 10 m cable

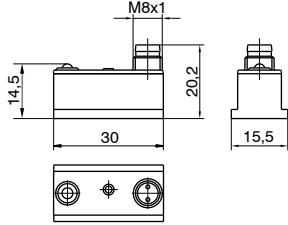
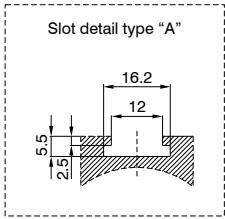
2 PIN Sensor with M8 connector

Coding: **Ⓡ**RS8.**Ⓥ**

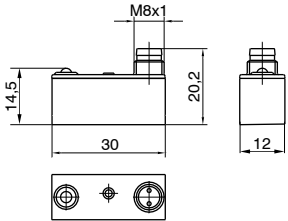
Technical characteristics	DC	UA		UC	
		A.C.	D.C.	A.C.	D.C.
Contact type	N.O.	N.O.		N.C.	
Permanent maximum current	1,2A	0,5A		0,3A	
Maximum current (0.5 sec. pulses)	1,5A	1A		0.8A	
Voltage field	12 ... 30V	3 ... 250V	12 ... 48V	3 ... 110V	12 ... 48V
Permanent maximum power	32W	20VA	15W	10VA	8W
Working temperature	-20°C ... 70°C				
Maximum voltage drop	2V	< 3V			
Connection type	With cable and connector				
Protection degree	IP65				
Switch-on time	2 ms				
Switch-off time	1 ms				
Average working time	10 ⁶ cycles				
Repetition of intervention point	± 0,1 mm				
Directive	CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091				
Fixing	With screw				
Weight	7g				
With LED indication	With LED				
LED color	Red				

TYPE
Ⓡ = Cylinders and microcylinders. Slot detail type "A".
S = Rodless cylinders
VERSION
Ⓥ DC = For continuous current N.O.
Ⓥ UA = Universal sensor with led N.O.
Ⓥ UC = Universal sensor with led N.C.

Cylinders and microcylinders

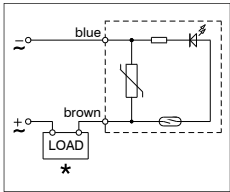


Rodless cylinders

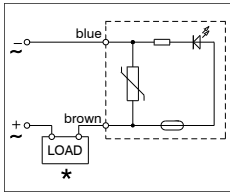


Diagrams and connections

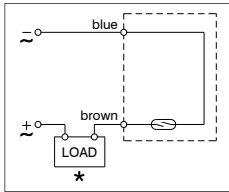
DC



UA



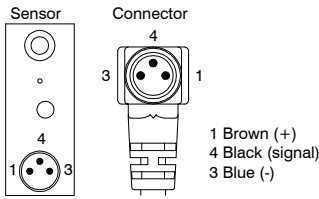
UC



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

Technical data

Connection 3 wires 3 PIN



M8 connector with 3 wires cable

Coding: **MCH****Ⓛ**



Technical characteristics	MCH1	MCH2	MCH3
Cable colour	Light grey		
External cable section	Ø2,6mm		
Cover material	PUR		
Number of wires in the cable	3 wires		
Wires section	0,15 mm ²		

CABLE LENGTH
Ⓛ 1 = 2,5 m 3-wire cable
2 = 5 m 3-wire cable
3 = 10 m 3-wire cable



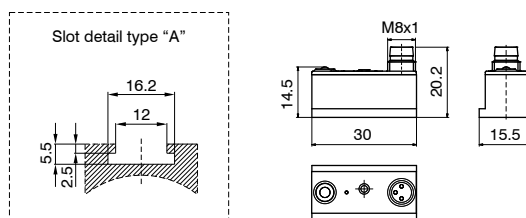
3-pin sensor with M8 connector for series assembling

Coding: **T**RS8UA/1L

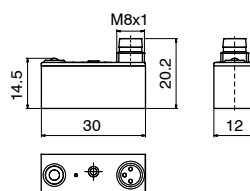
Technical characteristics	UA/1L	
	A.C.	D.C.
Permanent maximum current	0.5A	
Maximum current (0.5 sec. pulses)	1A	
Voltage field	24V	
Permanent maximum power	20VA	15W
Working temperature	-20°C ... 70°C	
Maximum voltage drop	0V	
Connection type	With cable and connector	
Protection degree	IP65	
Switch-on time	2 ms	
Switch-off time	1 ms	
Average working time	10 ⁷ cycles	
Repetition of intervention point	± 0,1 mm	
Contact type	N.O.	
Directive	CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091	
Fixing	With screw	
Weight	7g	
With LED indication	With LED	
LED color	Red	

T	TYPE
	= Cylinders and microcylinders.
	Slot detail type "A".
	S = Rodless cylinders

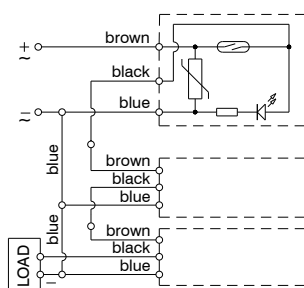
Cylinders and microcylinders



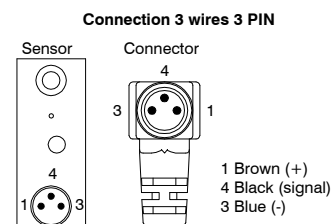
Rodless cylinders



Diagrams and connections



Technical data



M8 connector with 3 wires cable

Coding: **MCH****L**



Technical characteristics	MCH1	MCH2	MCH3
Cable colour	Light grey		
External cable section	Ø2,6mm		
Cover material	PUR		
Number of wires in the cable	3 wires		
Wires section	0,15 mm ²		

L	CABLE LENGTH
	1 = 2,5 m 3-wire cable
	2 = 5 m 3-wire cable
	3 = 10 m 3-wire cable

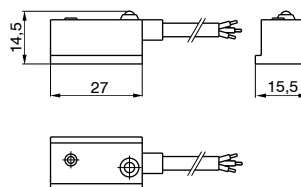
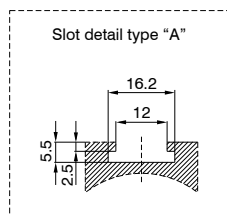
Sensor with 3-wire cable

Coding: 1T00.HA

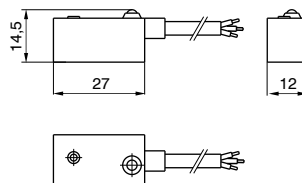
Technical characteristics	
Permanent maximum current	0,5A
Voltage field	10 ... 30V DC
Power (inductive load)	10W
Working temperature	-20°C ... 70°C
Voltage drop	2V
Cable length	3m
Cable colour	Black
External cable section	Ø4,2mm
Cover material	PUR
Number of wires in the cable	3
Wires section	0,34 mm ²
Connection type	With cable without connector
Protection degree	IP65
Switch-on time	0,8µs
Switch-off time	0,3µs
Average working time	10 ⁹ cycles
Repetition of intervention point	± 0,1 mm
Contact type	N.O.
Directive	CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091
Fixing	With screw
Weight	70g
With LED indication	With LED
LED color	Red

TYPE	5 = Cylinders and microcylinders. Slot detail type "A".
6 = Rodless cylinders	
VERSION	P = PNP N = NPN

Cylinders and microcylinders

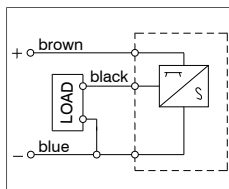


Rodless cylinders

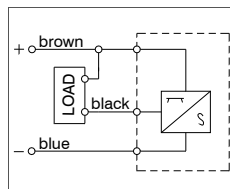


Diagrams and connections

PNP



NPN





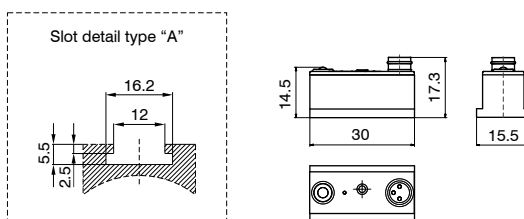
3-pin sensor for SNAP connector

Coding: **T**HS.PA

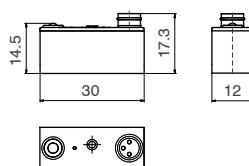
Technical characteristics	
Permanent maximum current	0,25A
Voltage field	6 ... 30V DC
Power (inductive load)	6W
Working temperature	-20°C ... 70°C
Voltage drop	2V
Connection type	With cable and connector
Protection degree	IP65
Switch-on time	0,8 μs
Switch-off time	0,3 μs
Average working time	10 ⁶ cycles
Repetition of intervention point	± 0,1 mm
Contact type	N.O.
Directive	CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091
Fixing	With screw
Weight	6g
With LED indication	With LED
LED color	Red

T	TYPE = Cylinders and microcylinders. Slot detail type "A". S = Rodless cylinders
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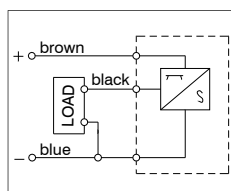
Cylinders and microcylinders



Rodless cylinders

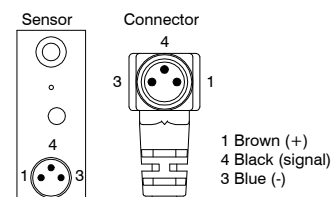


Diagrams and connections



Technical data

Connection 3 wires 3 PIN



Sensor + Cable



Coding: **T**HS.PAC**L**

T	TYPE = Cylinders and microcylinders. Slot detail type "A". S = Rodless cylinders
L	CABLE LENGTH 1 = 2,5 m cable 2 = 5 m cable 3 = 10 m cable

Connector with 3 wires cable



Technical characteristics	CH1	CH2	CH3
Cable colour	Light grey		
External cable section	Ø3,5mm		
Cover material	PVC		
Number of wires in the cable	3 wires		
Wires section	0,25 mm ²		

Coding: **CH****L**

L	CABLE LENGTH 1 = 2,5 m cable 2 = 5 m cable 3 = 10 m cable
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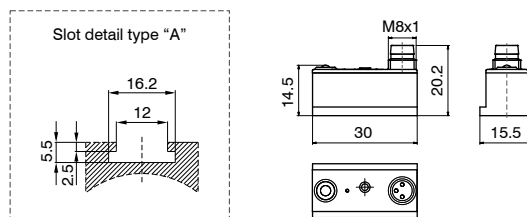
3 PIN sensor for M8 connector

Coding: **HS8.VA**

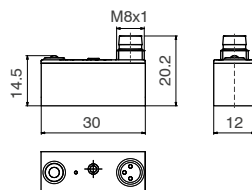
Technical characteristics	
Permanent maximum current	0,25A
Voltage field	6 ... 30V DC
Power (inductive load)	6W
Working temperature	-20°C ... 70°C
Voltage drop	2V
Connection type	With cable and connector
Protection degree	IP65
Switch-on time	0,8µs
Switch-off time	0,3µs
Average working time	10 ⁶ cycles
Repetition of intervention point	± 0,1 mm
Contact type	N.O.
Directive	CE as set out in Directive 2014/30/EU UKCA pursuant to U.K. S.I. Regulation 2016 No. 1091
Fixing	With screw
Weight	6g
With LED indication	With LED
LED color	Red

TYPE	= Cylinders and microcylinders. Slot detail type "A".
S	= Rodless cylinders
VERSION	
P	= PNP
N	= NPN

Cylinders and microcylinders

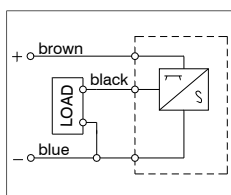


Rodless cylinders

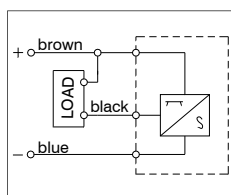


Diagrams and connections

PNP

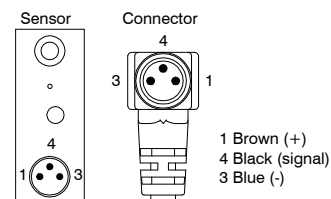


NPN



Technical data

Connection 3 wires 3 PIN



M8 connector with 3 wires cable

Coding: **MCHL**



Technical characteristics	MCH1	MCH2	MCH3
Cable colour	Light grey		
External cable section	Ø2,6mm		
Cover material	PUR		
Number of wires in the cable	3 wires		
Wires section	0,15 mm ²		

CABLE LENGTH	
1	= 2,5 meters
2	= 5 meters
3	= 10 meters



Series SA		
Series	Description	Assembly
1200	for microbore with threaded end covers and "TECNO-MIR" microbore	with clamps code 1260.Ø.F
	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
1306 - 1307 - 1308	or cylinders from Ø32 to Ø63	with brackets code 1306.A
	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
1319 - 1320	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
	for cylinders Ø125	with brackets code 1320.D
	for cylinders Ø160	with brackets code 1320.E
	for cylinders Ø200	with brackets code 1320.F
1390 - 1391	for cylinders ECOLIGHT Ø32 and Ø40	with brackets code 1390.A
	for cylinders ECOLIGHT Ø50 and Ø63	with brackets code 1390.B
	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



Series SR - SU - SQ - ST

The limit switches of magnetic sensors must be mounted on cylinders fitted with magnetic pistons. These, are activated by the magnetic field generated by the magnetic piston as it approaches and closes the circuit sending an electrical signal to either a relay, solenoid valve or converses with the electrical control system of the machine. There are both ampulla or Hall effect magnetic sensors available which are attached to the cylinder using a suitable cylinder clamp/adaptor or mounted in a suitable slot on the cylinder. The switch may also include an activation LED indicator.

Note: The magnetic sensors are in accordance with the **Directive 2014/30/EU** and following amendments

Instruction on how to use the sensors

Particular attention needs to be paid to ensure that you do not exceed the operating characteristics shown in the following pages. Its important to note; 2 wire sensors should not be connected to the supply voltage if a load is not connected in series. Failure to do so may result in damage to the sensor. Furthermore, please consider that the 'inrush' (loading) current absorbed by the sensors might be up to 50% higher than rated.

For direct currents (DC), The polarity of the connection must be observed: The brown cable must be connected to the live (+) and the blue wire connected to the negative (-).

For all sensor applications, particular attention must be paid to the external factors such as nearby live cables, electromagnetic fields generated by electric motors as well as nearby metallic bodies as these can affect the magnetic field generated by the magnetic piston which in turn can cause 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 2-wire reed type sensor, always ensure that the correct load is applied in series on any of the two wires.

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 compare to reed switched as they do not include any moving parts.