

The 2/2-way seat valves series C10C\*E are equipped with an inductive switch to monitor the closed position. The poppet has a 60/40 area ratio (AA = 0.6 AC, AB = 0.4 AC) and is capable for flow in both directions.

The safety overlap of the poppet avoids opening of the valve before the signal of the inductive switch has changed.

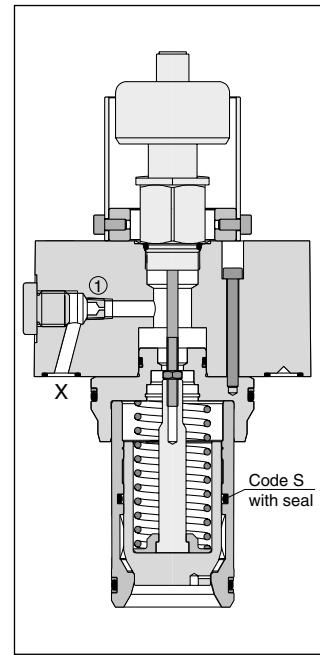
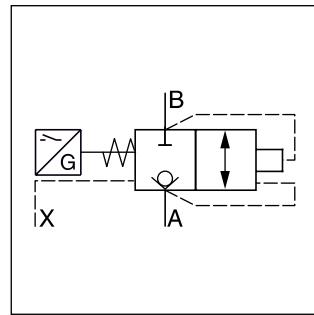
For sizes NG80 and NG100 a proximity switch is used.

### Features

- German trade association certificate No. HSM 16014
- 8 sizes, NG16 up to NG100
- Cover to mount a directional control valve (on the side) for cover 3 (for NG16 to NG63)
- Cavity and mounting pattern acc. to ISO 7368
- Monitored closed position
- Inductive switch CE conform
- Optional with poppet sealing between pilot flow C and port B

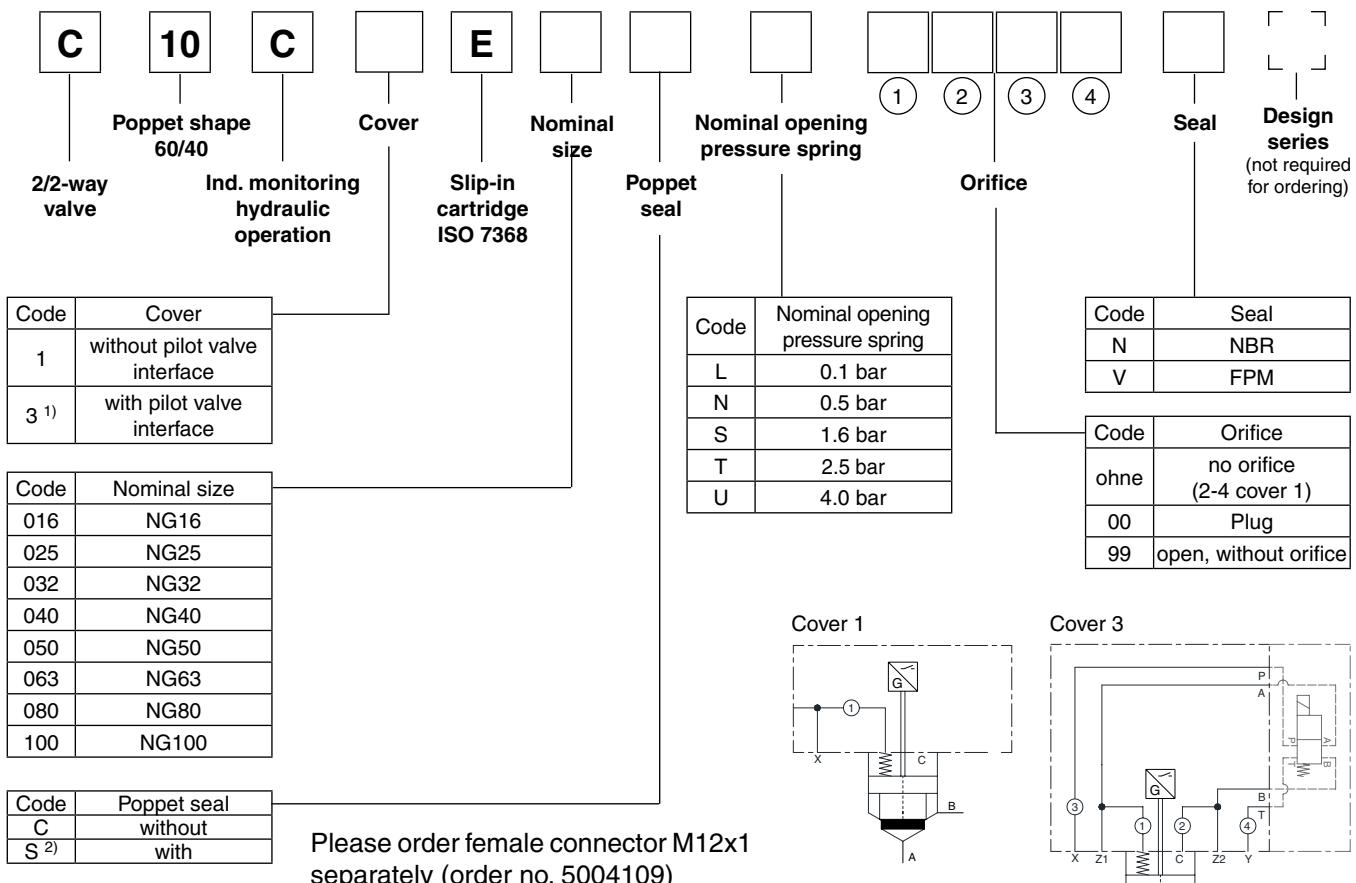


C10C3E



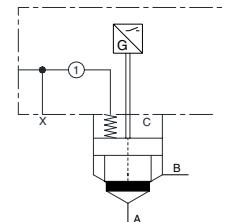
C10C1E

### Ordering code

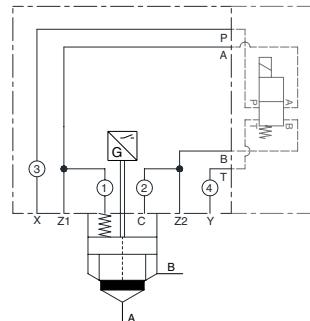


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Cover 1



Cover 3



Orifices (see 'Accessories')

<sup>1)</sup> NG16 to NG63. The DC valve is not included in the delivery.  
We recommend the following pilot valves: D1VW020BN\*W or D1VW020HN\*W,  
depending on the required functionality and plug location.

<sup>2)</sup> Only with spring S, T and U.

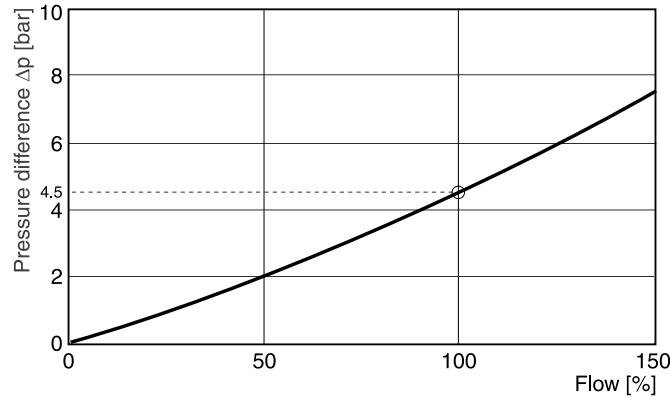
Note: X modifications are not certified.

## Technical data

General		2-way slip-in cartridge valves ISO 7368							
Design		2-way slip-in cartridge valves ISO 7368							
Size		NG16 NG25 NG32 NG40 NG50 NG63 NG80 NG100							
Mounting position		unrestricted							
Operation		hydraulic							
Ambient temperature	[C°]	-20...+60							
MTTF <sub>D</sub> value	[years]	150							
Weight	[kg]	1.5	2.7	4.3	7.4	12	23	53	89
Hydraulic									
Max. operating pressure	[bar]	350							
Nominal flow Δp 5 bar	[l/min]	230	400	800	1250	1625	3400	5000	7500
Fluid		Hydraulic oil according to DIN 51524							
Fluid temperature	[C°]	-20...+70 (NBR: -25...+70)							
Viscosity, permitted recommended	[cSt] / [mm <sup>2</sup> /s]	20...400 30...80							
Filtration		ISO 4406 (1999); 18/16/13							
Control volume at max. stroke	[cm <sup>3</sup> ]	2.03	6.45	12.21	20.32	39.40	94.56	218	374
Control surface (surface C = 100 %) A/B	[%]	approx. 60 / 40 related on surface C							
Opening pressure									
flow direction A→B	[bar]	Spring: L = 0.2; N = 0.9; S = 2.7; T = 4.0; U = 6.6							
flow direction B→A	[bar]	Spring: L = 0.3; N = 1.3; S = 4.0; T = 6.3; U = 10.0							
Electrical (Inductive switch)		See position control							

## Δp/Q performance curve

(without spring and poppet seal, C-chamber unloaded)



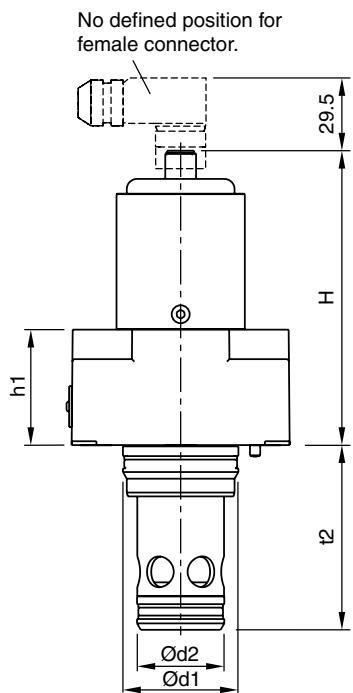
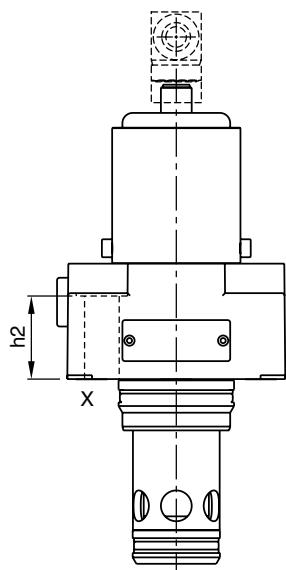
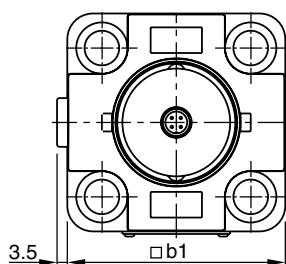
Characteristic curve measured with HLP46 at 50 °C.

## Recommended orifice diameter

Cover	Orifice	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
C10C1E	No.: 1	1/16 NPT	1/16 NPT	1/16 NPT	1/8 NPT				
C10C3E	No.: 1, 2, 3, 4	M5	M6	M6	M6	M8	M8	n/a	n/a
Inlet orifice		Ø 0.8	Ø 1.2	Ø 1.5	Ø 2.0	Ø 2.5	Ø 3.0	Ø 3.0	Ø 3.0

Depending on function, plugs must be used (code00).

## Dimensions C10C1E

NG16 to NG63<sup>1)</sup>

Cavity and mounting pattern acc. to ISO 7368

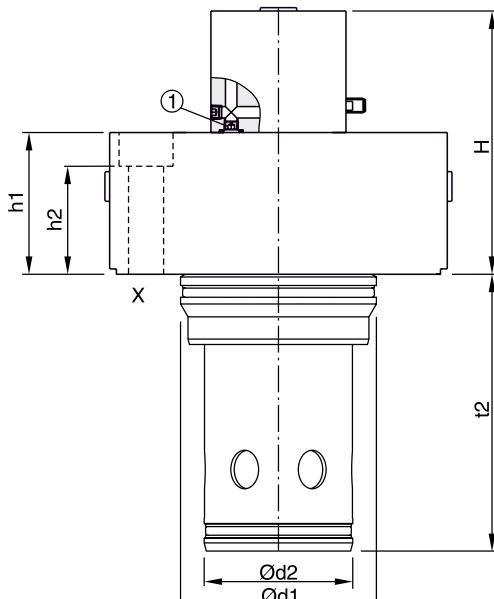
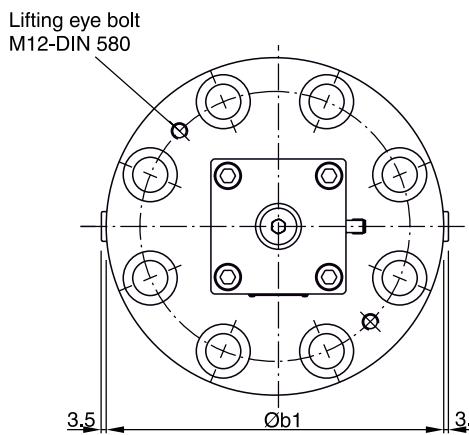
NG	H	h	h2	b1	d1	d2	t <sup>+0.1</sup>
16	107	36	28	65	32	25	56
25	116	45	32.5	85	45	34	72
32	122	50	32	102	60	45	85
40	131	60	40	125	75	55	105
50	141	70	45	140	90	68	122
63	156	85	55	180	120	90	155
80	195	105	80	250	145	110	205
100	210	120	89	300	180	135	245

## Seal and bolt kits

Nominal size	16	25	32	40	50	63	80	100
Seal kit	FPM	SK-C10C1E16V	SK-C10C1E25V	SK-C10C1E32V	SK-C10C1E40V	SK-C10C1E50V	SK-C10C1E60V	SK-C10C1E80V
		SK-C10C1E16N	SK-C10C1E25N	SK-C10C1E32N	SK-C10C1E40N	SK-C10C1E50N	SK-C10C1E60N	SK-C10C1E100V
Bolt kit [ISO 4762-12.9]		BK414 4x M8x40	BK391 4x M12x50	BK415 4x M16x55	BK416 4x M20x70	BK527 4x M20x80	BK418 4x M30x100	BK419 8x M24x120
Recommended torque [Nm]	31.8	108	264	517	517	1775	890	1775

## Attention!

The switch may only be adjusted by the valve manufacturer. The exchange of individual modules is not permitted.

<sup>1)</sup> Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

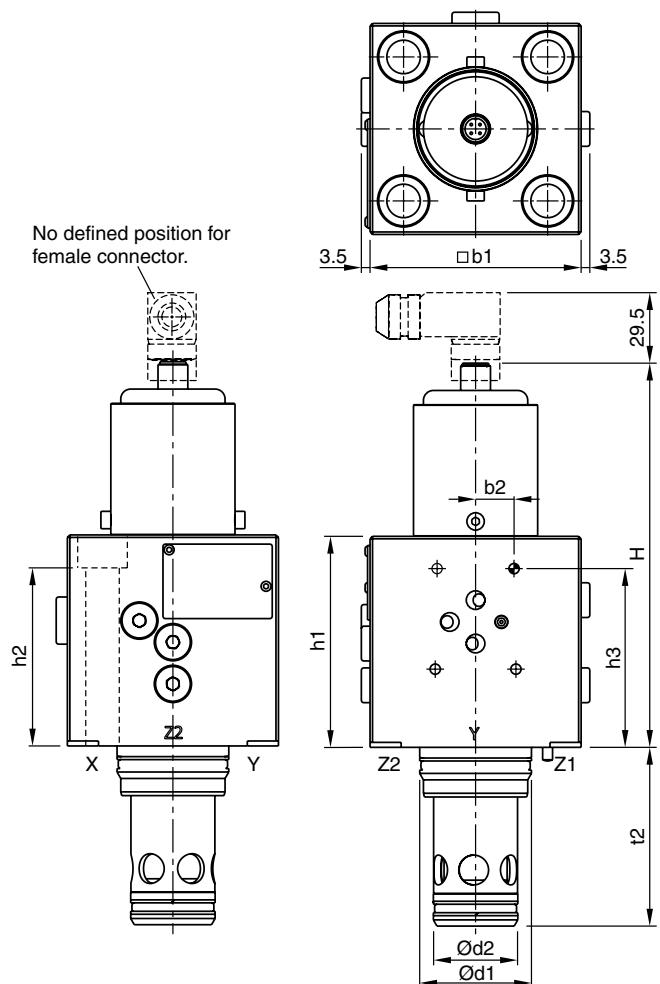
The space necessary to remove the M12x1 female connector is at least 22 mm.



## Dimensions C10C3E

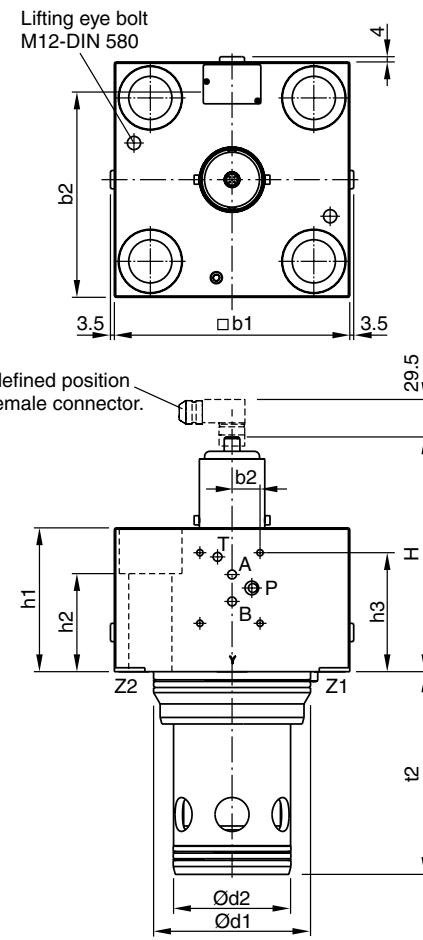
NG16 to NG50<sup>1)</sup>

Pilot valve interface NG06.



Cavity and mounting pattern acc. to ISO 7368

**NG63<sup>1)</sup>**  
Pilot valve interface NG10.



Cavity and mounting pattern acc. to ISO 7368

NG	H	h1	h2	h3	b1	b2	d1	d2	t2
16	156	85	76	72	65	15.5	31	25	56
25	156	85	70	72	85	15.5	45	34	72
32	156	85	56	72	102	15.5	60	45	85
40	156	85	50	72	125	15.5	75	55	105
50	156	85	60	72	140	15.5	90	68	122
63	181	110	75	91	180	21.5	120	90	155

## Seal and bolt kits

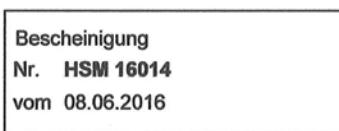
Nominal size	16	25	32	40	50	63
Seal kit	FPM	SK-C10C3E16V	SK-C10C3E25V	SK-C10C3E32V	SK-C10C3E40V	SK-C10C3E50V
	NBR	SK-C10C3E16N	SK-C10C3E25N	SK-C10C3E32N	SK-C10C3E40N	SK-C10C3E50N
Bolt kit [ISO 4762-12.9]		BK533 4x M8x90	BK532 4x M12x90	BK526 4x M16x80	BK527 4x M20x80	BK534 4x M20x90
Recommended torque ± 15%	[Nm]	31.8	108	264	517	517
						1775

## Attention!

The switch may only be adjusted by the valve manufacturer. The exchange of individual modules is not permitted.

<sup>1)</sup> Please order female connector M12x1 separately (see accessories directional control valves, female connector M12x1 (order no.: 5004109).

## German trade association certificate

**DGUV Test**

Prüf- und Zertifizierungsstelle  
Hebezeuge, Sicherheitskomponenten  
und Maschinen  
Fachbereich Holz und Metall

**Baumusterprüfbescheinigung**

Name und Anschrift des  
Bescheinigungsinhabers: Parker Hannifin GmbH  
(Auftraggeber)  
Gutenbergstr. 38  
41564 Kaarst

Produktbezeichnung: **2/2-Wegesitzventil mit Überwachung**

Typ: C10C1 E "NG" mit "NG" 16/25/32/40/50/63/80/100  
C10C3 E "NG" mit "NG" 16/25/32/40/50/63/80/100

Prüfgrundlage: - GS-HSM-20 "Spritzgießmaschinen", 04/2015  
- EN 201:2009 "Gummi- und Kunststoffmaschinen -  
Spritzgießmaschinen - Sicherheitsanforderungen"

Zugehöriger Prüfbericht: Nr. 014/2016 vom 27.05.2016

Weitere Angaben: Bestimmungsgemäße Verwendung:  
Zur Verwendung für hydraulische Schließsicherungen in  
Spritzgießmaschinen gemäß Herstellereinbuanleitung

Bemerkungen: Das jeweilige Ventil ist gemäß Kapitel 5 der  
EN 201:2009 "Gummi- und Kunststoffmaschinen -  
Spritzgießmaschinen - Sicherheitsanforderungen" von der Steuerung  
der Spritzgießmaschine selbsttätig zu überwachen, so dass auch bei  
Versagen des Positionsschalter ein erneuter Maschinenzyklus nicht  
mehr eingeleitet werden kann. Das Ventil ist vom Hersteller  
eingestellt und darf nur vollständig getauscht werden.

Das geprüfte Baumuster entspricht den einschlägigen Bestimmungen der Richtlinie  
2006/42/EG (Maschinen).

Diese Bescheinigung ist gültig bis: **07.06.2021**

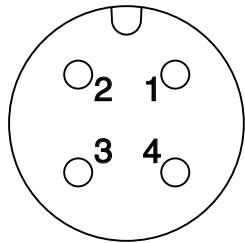
Die Baumusterprüfbescheinigung berechtigt nicht zur Nutzung eines Prüfzeichens.  
Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die  
Prüf- und Zertifizierungsordnung.



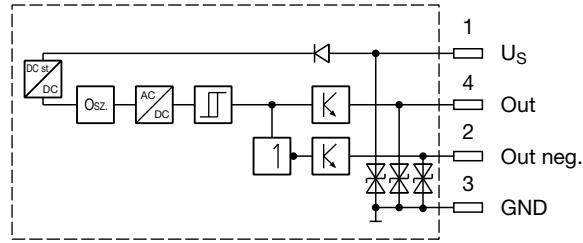
**Electrical characteristics of position control M12x1 as per IEC 61076-2-101, NG16 to NG63**

Supply voltage	[VDC]	24
Tolerance supply voltage	[%]	$\pm 20$
Ripple supply voltage	[%]	$\leq 10$
Polarity protection	[V]	300
Current consumption without load	[mA]	$\leq 20$
Switching hysteresis	[mm]	$< 0.06$
Max. output current per channel, ohmic	[mA]	250
Ambient temperature	[°C]	-20 ... +60
Protection		IP65 acc. EN 60529
CE conform <sup>1)</sup>		EN 61000-4-2 / EN 61000-4-4 / EN 61000-4-6 1) / ENV 50140 / ENV 50204
Min. distance to next AC solenoid	[m]	0.1
Interface		M12x1 to IEC 61076-2-101

**M12 pin assignment**



- 1 +  $U_S$  19.2...28.8 V
- 2 Out B: normally open
- 3 0V
- 4 Out A: normally closed



Outputs: Open collector

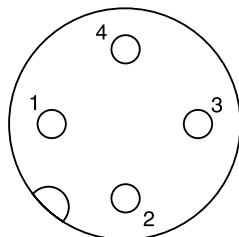
Please order plug M12x1 separately (see accessories directional control valves, plug M12x1; order no.: 5004109)

<sup>1)</sup> Only guaranteed with screened cable and female connector

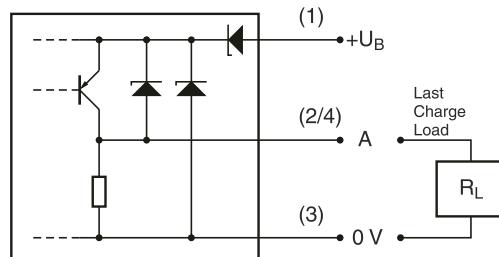
## Electrical characteristics of position control M12x1 as per IEC 61076-2-101, NG80 to NG100

Protection class	IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)	
Ambient temperature	[°C]	-20...+60
Supply voltage $U_S$ / ripple	[V]	10...30 / 10 %
Current consumption without load	[mA]	≤ 10
Max. output current per channel, ohmic	[mA]	200
Min. output load per channel, ohmic	[kOhm]	100
Max. output drop at 0.2 A	[V]	≤ 2
EMC	EN61000-6-4 / EN61000-6-2	
Min. distance to next AC solenoid	[m]	>0.1
Interface	M12x1	
Wiring min.	[mm <sup>2</sup> ]	3 x 0.14 braid shield recommended
Wiring length max.	[m]	50 recommended

## M12 pin assignment



- 1 +  $U_S$  10...30 V
- 2 Out A: not connected
- 3 0V
- 4 Out A: normally closed



## Definition

Start position monitored:

The switching point of the inductive switch is within the overlap of the poppet.

After the signal of the inductive switch has changed, the poppet leaves the safety overlapping position.

Please order plug M12x1 separately. Straight plug recommended – no defined position possible for angled plug.