

Locking unit, LU6



AVENTICS™ Locking unit, LU6



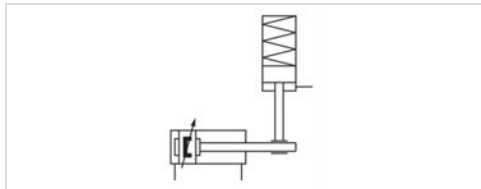
Locking unit, Series LU6

- Ø 32-125 mm

- Holding and braking: non-adjustable spring, Release: compressed air



Version	Clamping jaw lock
Function	Static holding Dynamic braking
Release pressure	4 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 mg/m³
Weight	See table below



Technical data

Part No.	Piston Ø	suitable piston rod Ø	Piston rod extension	Compressed air connection	Required flow rate
					Q _n
5230996402	32 mm	12 mm	125 mm	G 1/8	50 l/min
5231996402	40 mm	16 mm	125 mm	G 1/8	70 l/min
5232996402	50 mm	20 mm	145 mm	G 1/8	140 l/min
5233996402	63 mm	20 mm	165 mm	G 1/8	240 l/min
5234996402	80 mm	25 mm	185 mm	G 1/8	450 l/min
5235996402	100 mm	25 mm	220 mm	G 1/8	700 l/min
5236996402	125 mm	32 mm	220 mm	G 1/4	1200 l/min

Part No.	Max. torsional moment of piston rod	B10d value static	B10d value dynamic
5230996402	0.5 Nm	5.000.000	2.000.000
5231996402	1 Nm	5.000.000	2.000.000
5232996402	2 Nm	5.000.000	2.000.000
5233996402	2.5 Nm	5.000.000	2.000.000
5234996402	5 Nm	5.000.000	2.000.000
5235996402	9 Nm	5.000.000	2.000.000
5236996402	15 Nm	5.000.000	2.000.000

Part No.	Buckling protection of the piston rod 1)		Weight	
	Max. cylinder stroke for Euler case 1	Max. cylinder stroke for Euler case 2		
5230996402	750 mm	400 mm	0.8 kg	1)
5231996402	1100 mm	550 mm	1 kg	1)
5232996402	1350 mm	700 mm	1.8 kg	1)
5233996402	950 mm	500 mm	2.8 kg	1)

Part No.	Buckling protection of the piston rod 1)		Weight	
	Max. cylinder stroke for Euler case 1	Max. cylinder stroke for Euler case 2		
5234996402	1350 mm	700 mm	5.5 kg	1)
5235996402	950 mm	500 mm	9.5 kg	1)
5236996402	1500 mm	800 mm	13.8 kg	2)

1) Only applies in dynamic cases, and only retracting, DGUV certified

2) Only applies in dynamic cases, and only retracting

Technical data

Piston Ø	32 mm	40 mm	50 mm
Max. holding/braking force FLU6	760 N	1200 N	1900 N
Max. moving mass, external mmax	77 kg	122 kg	194 kg
Max. piston speed vmax	1 m/s	1 m/s	1 m/s
Max. total braking energy (MJ) Etot	3.2 MJ	6 MJ	10 MJ
Max. braking energy per hour PLU6	720 J	1350 J	2250 J
Max. braking energy per braking cycle ELU6	4.8 J	9 J	15 J
Braking energy per braking cycle related to B10d EB10d	1.6 J	3 J	5 J
Brake response time (4 bar) tbrake	0.08 s	0.08 s	0.08 s
Brake response time (6.3 bar) tbrake	0.1 s	0.1 s	0.1 s
Brake response time (10 bar) tbrake	0.12 s	0.12 s	0.12 s

Piston Ø	63 mm	80 mm	100 mm
Max. holding/braking force FLU6	3000 N	5000 N	8000 N
Max. moving mass, external mmax	306 kg	510 kg	815 kg
Max. piston speed vmax	1 m/s	1 m/s	1 m/s
Max. total braking energy (MJ) Etot	18 MJ	36 MJ	58 MJ
Max. braking energy per hour PLU6	4050 J	8100 J	13200 J
Max. braking energy per braking cycle ELU6	27 J	54 J	88 J
Braking energy per braking cycle related to B10d EB10d	9 J	18 J	29 J
Brake response time (4 bar) tbrake	0.08 s	0.08 s	0.09 s
Brake response time (6.3 bar) tbrake	0.1 s	0.1 s	0.11 s
Brake response time (10 bar) tbrake	0.12 s	0.12 s	0.13 s

Piston Ø	125 mm
Max. holding/braking force FLU6	12000 N
Max. moving mass, external mmax	1223 kg
Max. piston speed vmax	1 m/s
Max. total braking energy (MJ) Etot	93 MJ
Max. braking energy per hour PLU6	21000 J
Max. braking energy per braking cycle ELU6	140 J
Braking energy per braking cycle related to B10d EB10d	47 J
Brake response time (4 bar) tbrake	0.09 s
Brake response time (6.3 bar) tbrake	0.11 s
Brake response time (10 bar) tbrake	0.13 s

The values for the max. braking energy per braking cycle are equivalent to the cushioning energy for cylinder series PRA and TRB.

Technical information

The maximum ambient and medium temperature is + 70 °C for the dynamic braking function.

Note:

Before pressurizing the locking unit, make sure that there is a balance of forces at the piston on the drive cylinder. Please see the operating instructions for further safety-relevant information. The locking unit can be used in controls with a max. performance level e in accordance with DIN EN ISO 13849-1 ("basic and well-tried safety principles"). For applications in category 2 to 4 controls, additional control measures according to DIN EN ISO 13849-1 are required.

The locking unit can be used as an individual component or pre-mounted on a cylinder..

Scope of delivery: LU6, each with 4 flange nuts, washers, and tie rods

For technical reasons, formulas and sample calculations have been moved to the MediaCentre (link to operating instructions).

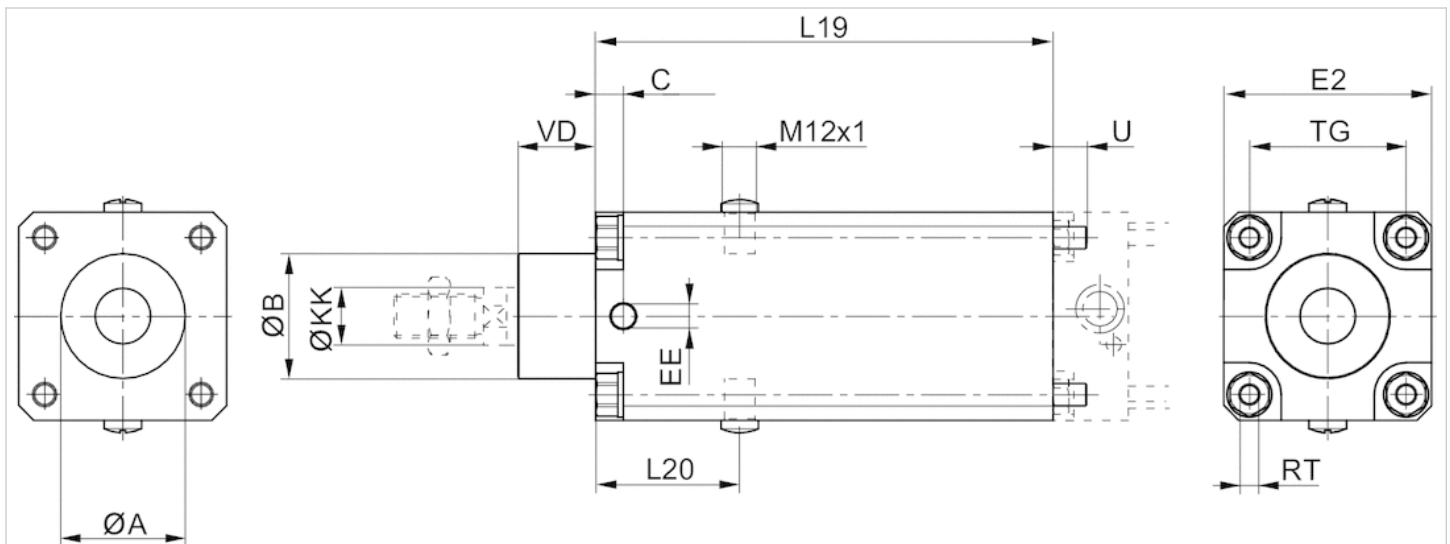
Technical information

Material

Housing	Aluminum, anodized
Seal	Nitrile butadiene rubber
Scraper	Nitrile butadiene rubber

Dimensions

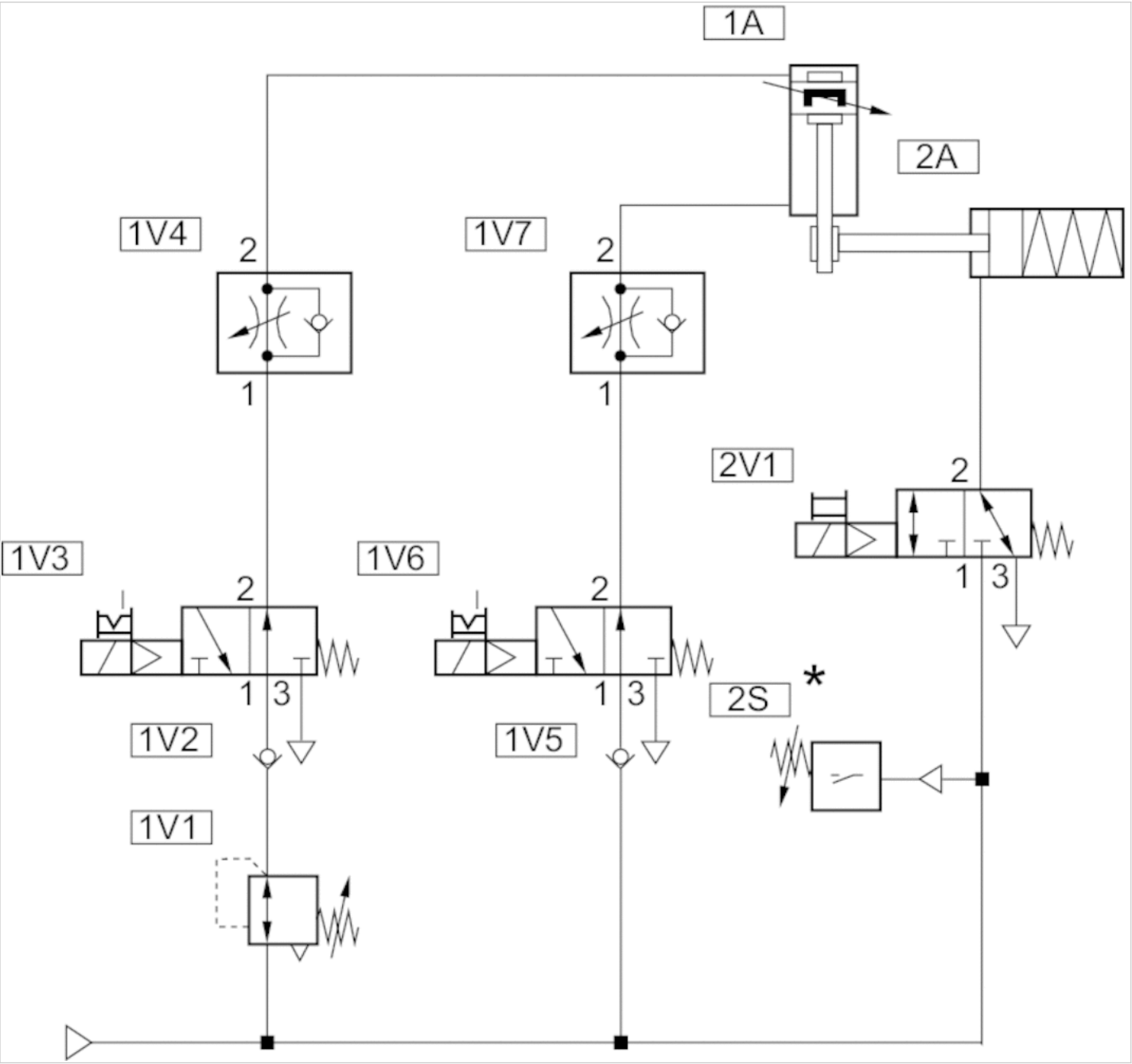
Dimensions



Dimensions

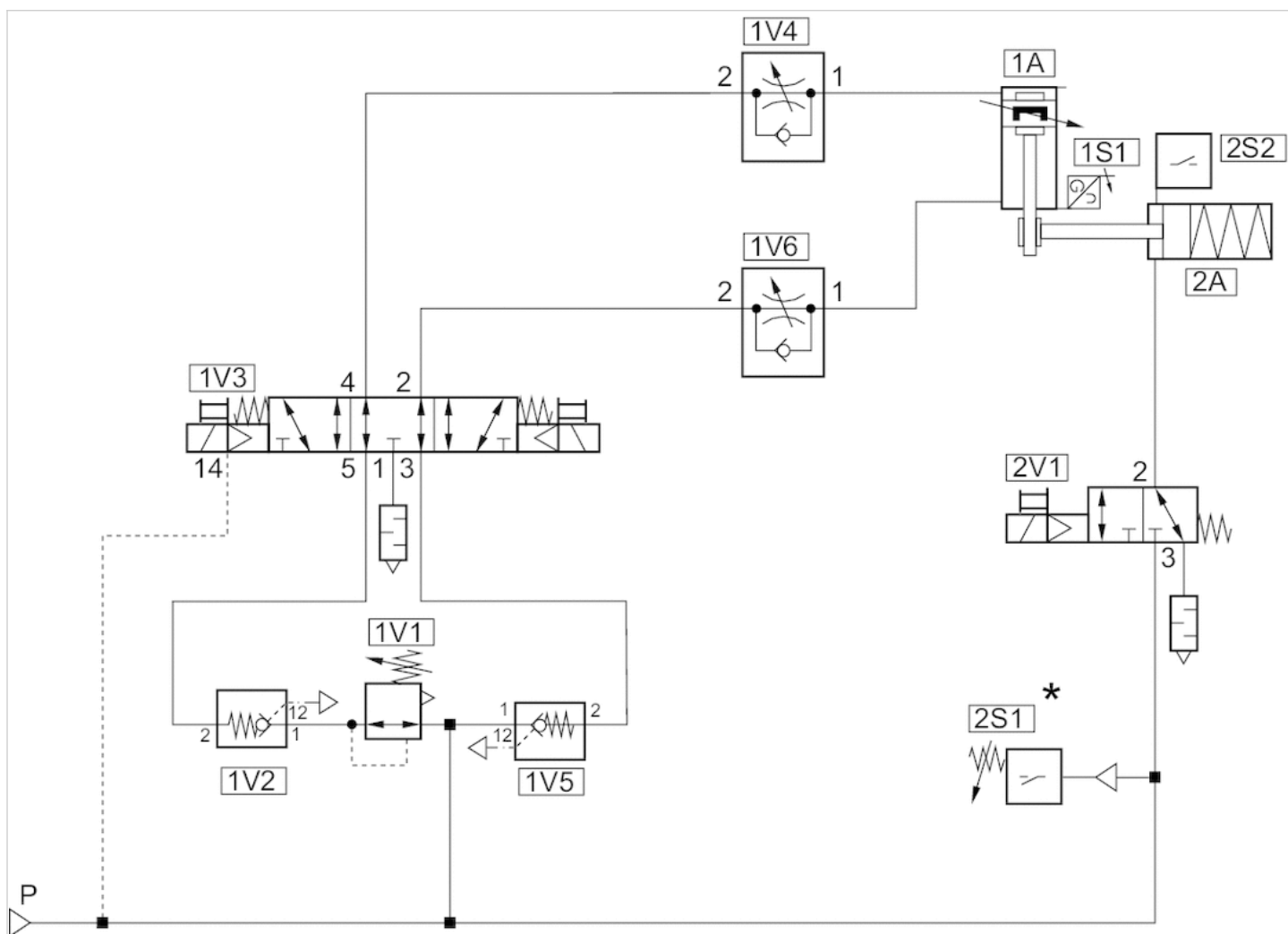
Piston Ø	ØA	ØB d11	C	EE	E2	L19	L20	ØKK e8-h9	TG	RT	U	VD
32 mm	30,5	30	9	G1/8	48	125	44	12	32,5	M6	10	19
40 mm	35,5	35	9	G1/8	53	125	44	16	38	M6	10	21
50 mm	40,5	40	9	G1/8	63	145	49	20	46,5	M8	11	28
63 mm	45,5	45	10	G1/8	75	165	52	20	56,5	M8	11	28
80 mm	45,5	45	11	G1/8	98	185	61.5	25	72	M10	16	34
100 mm	55,5	55	13	G1/8	118	220	68	25	89	M10	16	37
125 mm	60,5	60	13	G1/4	142	220	75	32	110	M12	16	45

Circuit example for non-safety relevant functions; Vertical mounting orientation



* From 4 bar : release of 2V1

Circuit example for safety-related stop functions; horizontal installation position

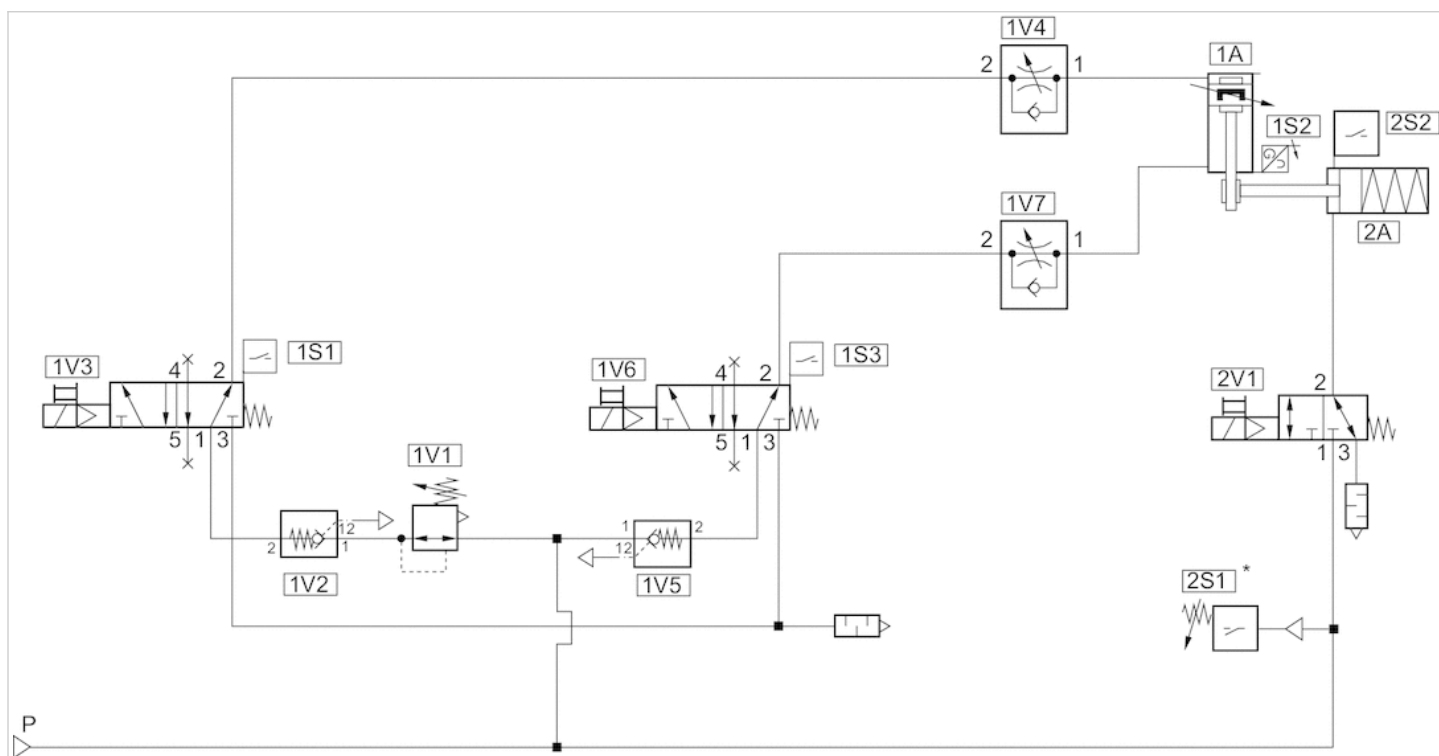


Channel 1: Safe stopping and closing

Channel 2: Safe brake control

* From 4 bar : release of 2V1

Circuit example for safety-related stop functions; Vertical mounting orientation



Channel 1: Safe stopping and closing

Channel 2: Safe brake control

* From 4 bar : release of 2V1

Sensor, Series IN1

- for locking unit, series LU6



Standardization	DIN EN 60947-5-2
Certificates	cULus
Ambient temperature min./max.	-20 ... 65 °C
Protection class	IP67
Hysteresis	5 - 15%, adjustable
Temperature drift	± 10 %
Residual ripple	≤ 10 %
Reproducibility	≤ 2 %
Switching logic	NO (make contact)
LED status display	Yellow

Technical data

Part No.	Operational voltage	Switching distance max.	Power consumption	Continuous current
R412010426	10 ... 30 V DC	2 mm	10 mA	0.2 A

Part No.	Short circuit resistance
R412010426	short circuit resistant Protected against polarity reversal

Technical information

Flush installation

Switching states:

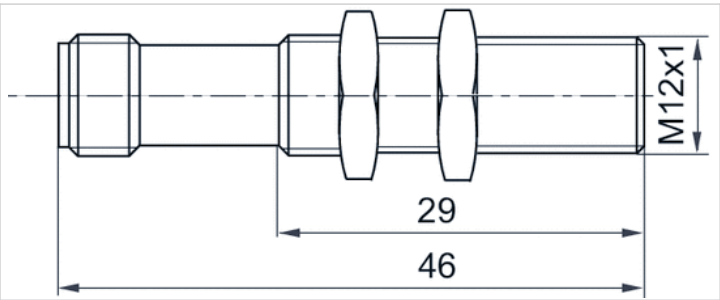
1. Pressure applied to locking unit, clamping pliers are open, sensor does not emit a signal (normally open)
2. No pressure applied to locking unit, clamping pliers are closed, sensor emits a signal (feedback that LU6 is clamping)

Technical information

Material	
Housing	Brass

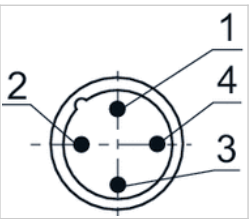
Dimensions

Dimensions



Pin assignments

Pin assignments, M12x1



Pin	1	2	3
Allocation	Pin 1: operational voltage + UB	not assigned	m = mass
4			
switch output Out			

Efficient pneumatic solutions, our program: cylinders and drives, valves and valve systems, air supply management



Visit us: [Emerson.com/Aventics](https://www.emerson.com/Aventics)

Your local contact: [Emerson.com/contactus](https://www.emerson.com/contactus)



[Emerson.com](https://www.emerson.com)



[Facebook.com/EmersonAutomationSolutions](https://www.facebook.com/EmersonAutomationSolutions)



[LinkedIn.com/company/Emerson-Automation-Solutions](https://www.linkedin.com/company/Emerson-Automation-Solutions)



[Twitter.com/EMR_Automation](https://twitter.com/EMR_Automation)

An example configuration is depicted on the title page. The delivered product may thus vary from that in the illustration. Subject to change. This Document, as well as the data, specifications and other information set forth in it, are the exclusive property of AVENTICS GmbH. It may not be reproduced or given to third parties without its consent. Only use the AVENTICS products shown in industrial applications. Read the product documentation completely and carefully before using the product. Observe the applicable regulations and laws of the respective country. When integrating the product into applications, note the system manufacturer's specifications for safe use of the product. The data specified only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that the products are subject to a natural process of wear and aging.

The Emerson logo is a trademark and service mark of Emerson Electric Co. Brand logotype are registered trademarks of one of the Emerson family of companies. All other marks are the property of their respective owners. © 2017 Emerson Electric Co. All rights reserved.
2019-03



CONSIDER IT SOLVED™