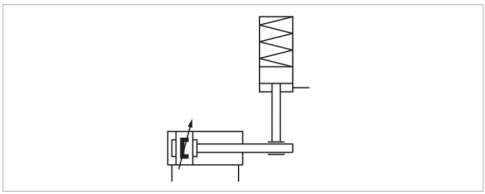
Locking unit, Series LU6

- 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.	For piston Ø	Piston Ø	suitable piston rod Ø	Piston rod extension	Compressed air connection
5230996402	32 mm	32 mm	12 mm	125 mm	G 1/8
5231996402	40 mm	40 mm	16 mm	125 mm	G 1/8
5232996402	50 mm	50 mm	20 mm	145 mm	G 1/8
5233996402	63 mm	63 mm	20 mm	165 mm	G 1/8
5234996402	80 mm	80 mm	25 mm	185 mm	G 1/8
5235996402	100 mm	100 mm	25 mm	220 mm	G 1/8
5236996402	125 mm	125 mm	32 mm	220 mm	G 1/4

Part No.	Required flow rate	Max. torsional moment of piston rod	B10d valuestatic	B10d valuedynamic
	Qn			
5230996402	50 l/min	0,5 Nm	5.000.000	2.000.000
5231996402	70 l/min	1 Nm	5.000.000	2.000.000
5232996402	140 l/min	2 Nm	5.000.000	2.000.000
5233996402	240 l/min	2,5 Nm	5.000.000	2.000.000
5234996402	450 l/min	5 Nm	5.000.000	2.000.000
5235996402	700 l/min	9 Nm	5.000.000	2.000.000
5236996402	1200 l/min	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)

Part No.	Buckling protection of the piston rod 1)		Weight	
	Max. cylinder stroke for Euler case 1	Max. cylinder stroke for Euler case 2		
5233996402	950 mm	500 mm	2,8 kg	1)
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	63 mm
Max. holding/braking force F	760 N	1200 N	1900 N	3000 N
Max. moving mass, external m	77 kg	122 kg	194 kg	306 kg
Max. piston speed v	1 m/s	1 m/s	1 m/s	1 m/s
Max. total braking energy (MJ) E	3,2 MJ	6 MJ	10 MJ	18 MJ
Max. braking energy per hour P	720 J	1350 J	2250 J	4050 J
Max. braking energy per braking cycle E	4,8 J	9 J	15 J	27 J
Braking energy per braking cycle related to B10d E	1,6 J	3 J	5 J	9 J
Brake response time (4 bar) t	0,08 s	0,08 s	0,08 s	0,08 s
Brake response time (6.3 bar) t	0,1 s	0,1 s	0,1 s	0,1 s
Brake response time (10 bar) t	0,12 s	0,12 s	0,12 s	0,12 s

Piston Ø	80 mm	100 mm	125 mm
Max. holding/braking force F	5000 N	8000 N	12000 N
Max. moving mass, external m	510 kg	815 kg	1223 kg
Max. piston speed v	1 m/s	1 m/s	1 m/s
Max. total braking energy (MJ) E	36 MJ	58 MJ	93 MJ
Max. braking energy per hour P	8100 J	13200 J	21000 J
Max. braking energy per braking cycle E	54 J	88 J	140 J
Braking energy per braking cycle related to B10d E	18 J	29 J	47 J
Brake response time (4 bar) t	0,08 s	0,09 s	0,09 s
Brake response time (6.3 bar) t	0,1 s	0,11 s	0,11 s
Brake response time (10 bar) t	0,12 s	0,13 s	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

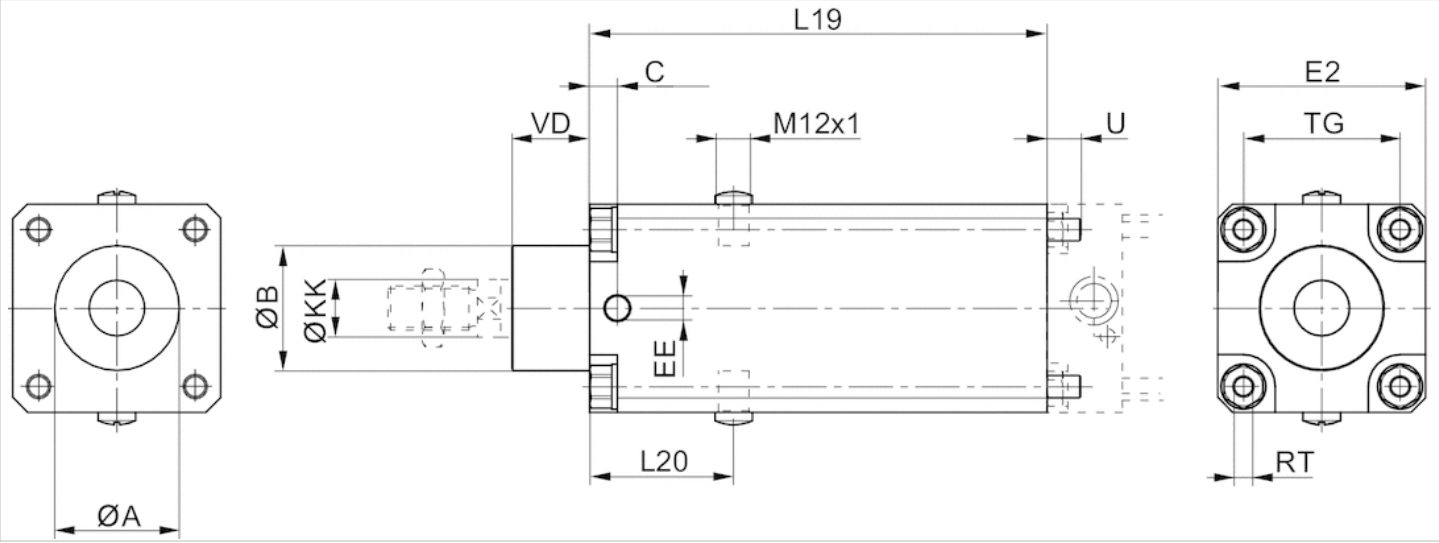
The maximum ambient and medium temperature is + 70 °C for the dynamic braking function.
Note:Before pressurizing the locking unit, make sure that there is a balance of forces at the piston on the drive cylinder. Please see the operating instructions for further safety-relevant information. The locking 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

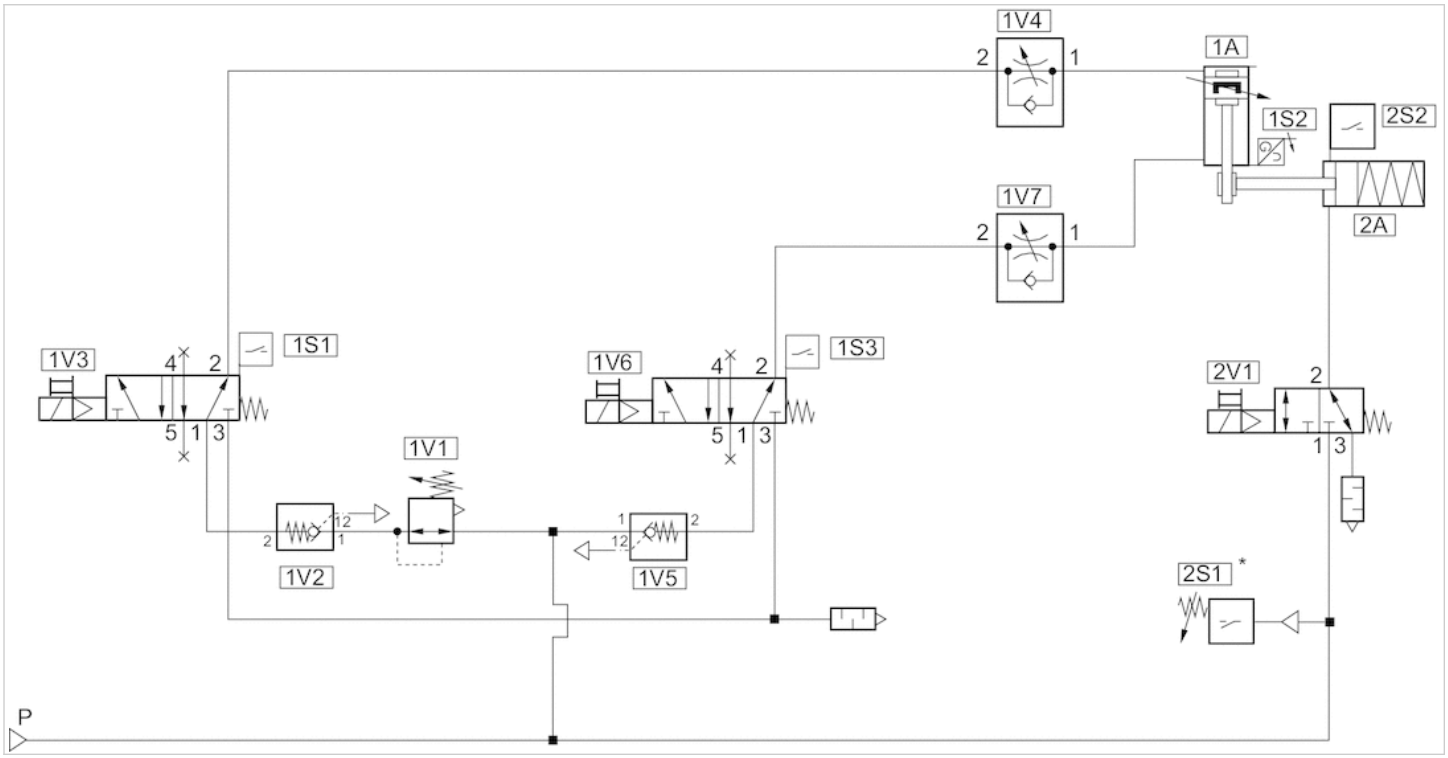
Dimensions



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

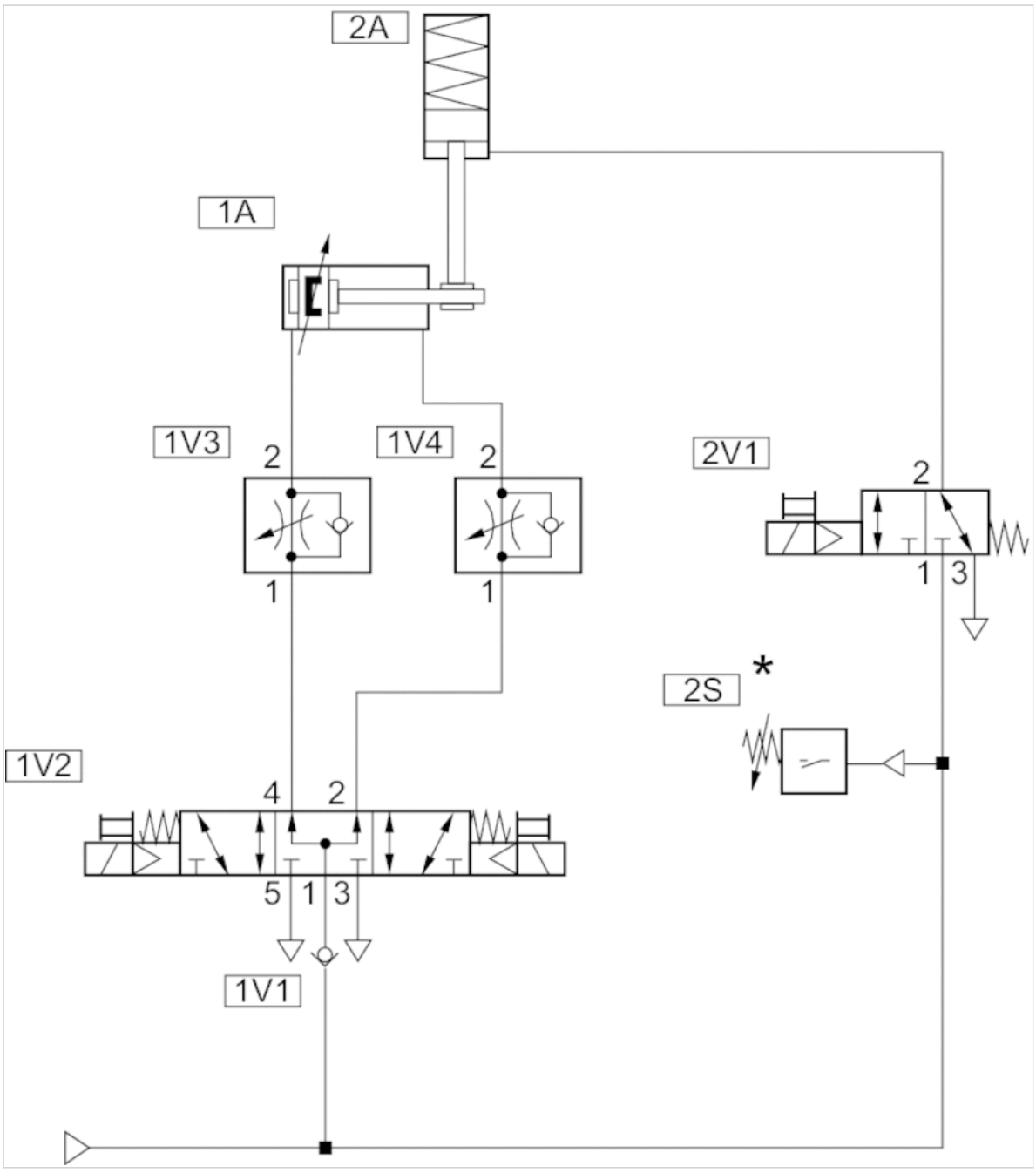
Circuit example for safety-related stop functions: Vertical mounting orientation



Channel 1: Safe stopping and closing
Channel 2: Safe brake control
* From 4 bar : release of 2V1

Circuit diagram

Circuit example for non-safety relevant functions: horizontal installation position



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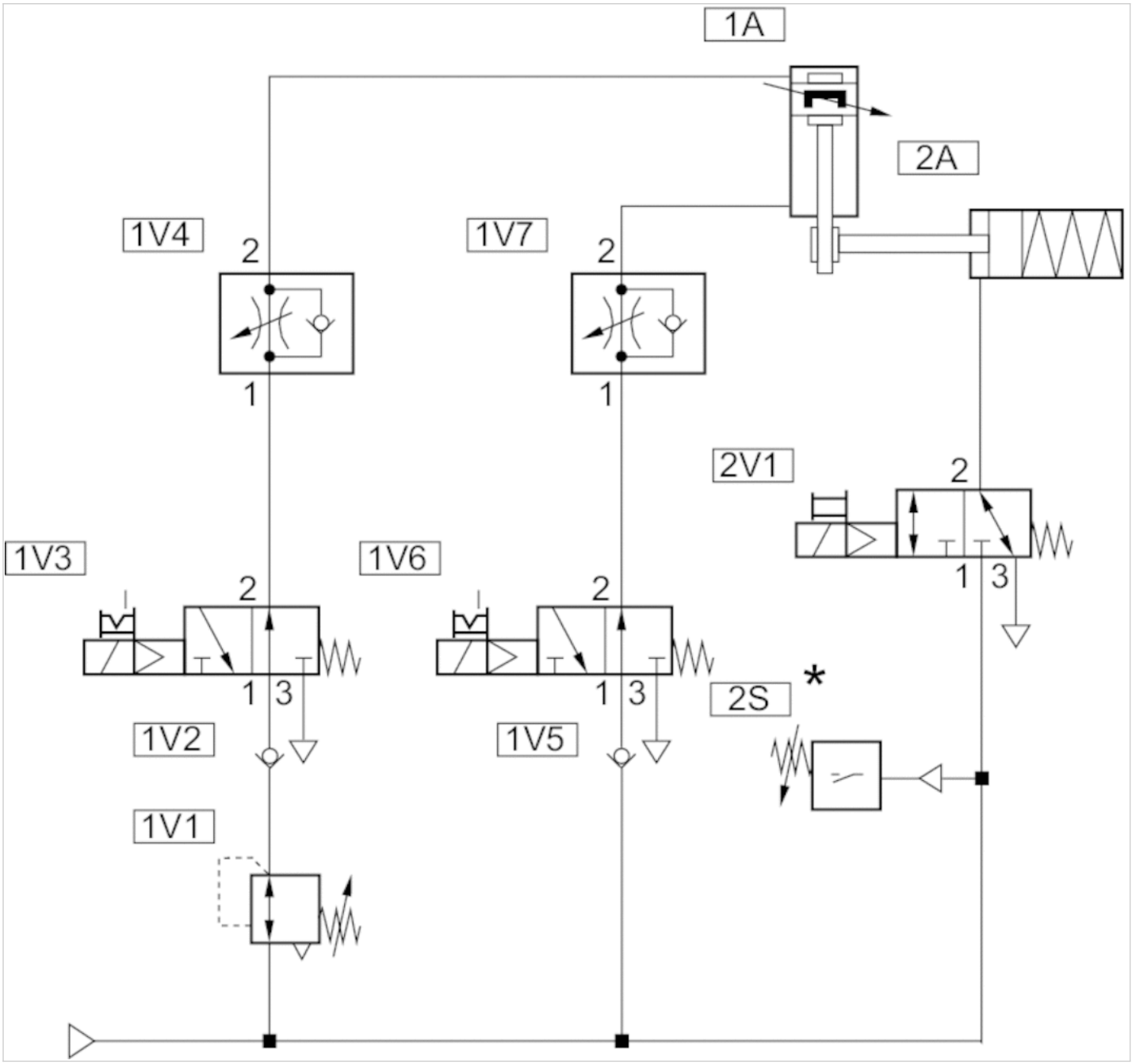
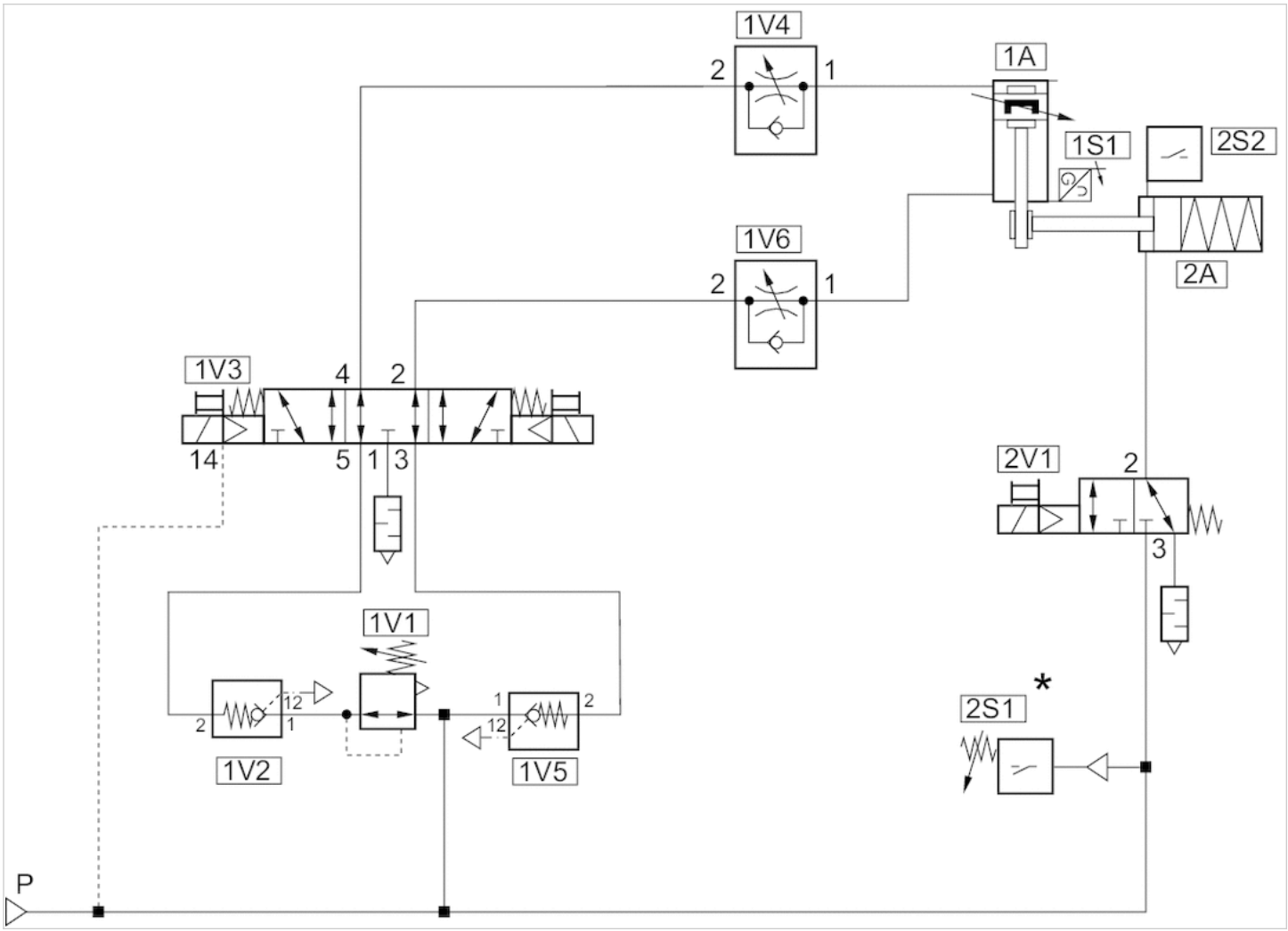
Circuit example for non-safety relevant functions: Vertical mounting orientation



* 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

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.	Operationalvoltage	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

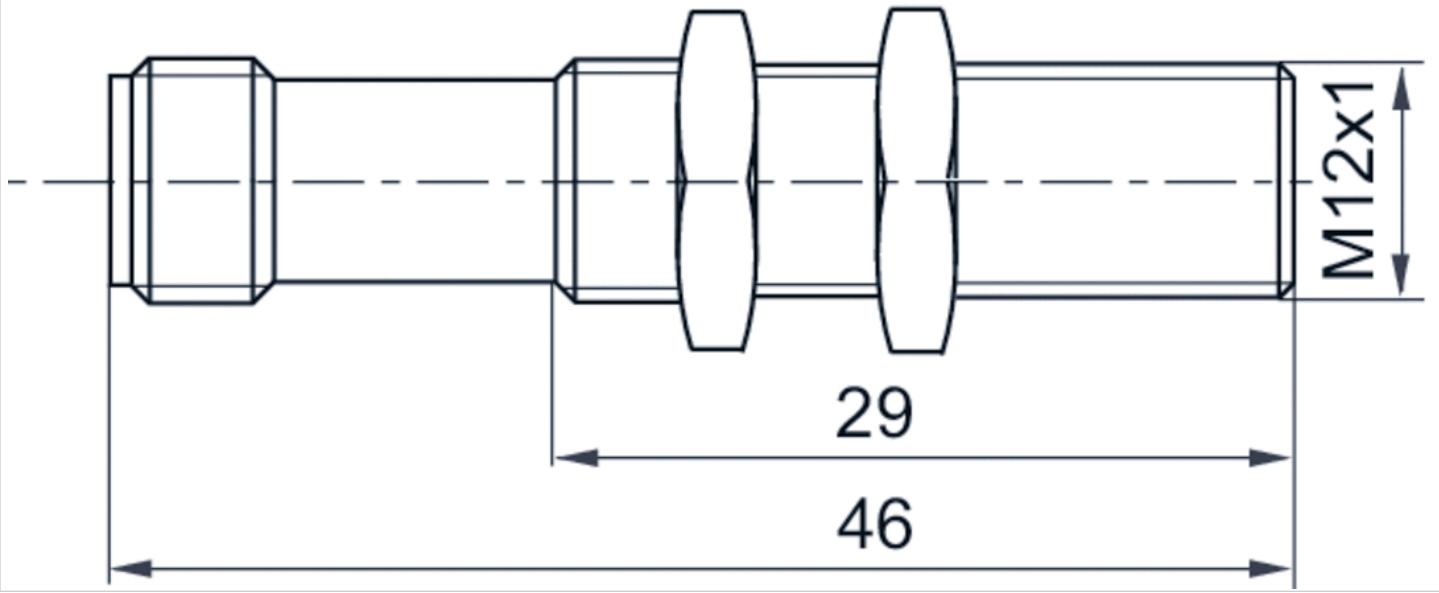
Flush installation
Switching states:1. Pressure applied to locking unit, clamping pliers are open, sensor does not emit a signal (normally open)2. No pressure applied to locking unit, clamping pliers are closed, sensor emits a signal (feedback that LU6 is clamping)

Technical information

Material	
Housing	Brass

Dimensions

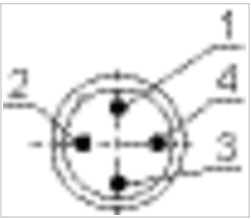
Dimensions



2) not assigned

Pin assignments

Pin assignments M12x1



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

Pin	1	2	3
Allocation	Pin 1: operational voltage + UB	not assigned	m = mass

4
Pin 4: switch output Out