PROXIMITY SWITCHES
SERIES KT-21 AND KT-50

STRÁNSKÝ A PETRŽÍK

KT-xxP series of electronic (PNP) proximity switches eliminates negative features of reed relays. Those switches are fully electronic, which brings excellent properties, long lifetime and integrated protections. We also offer reed switches, series KT-xxR. Series KT switches can be used with all types of Stránský a Petržík's cylinders. For various types of cylinders the right bracket must be used.
Switches KT-50 can be used with cylinders with T-slot made by other producer.

Technical data

Description	Value / Switch type			
	KT-21P	**KT-21R**	**KT-50P**	**KT-50R**
Supply voltage U_b [V]	5 to 30 DC	5 to 240 DC / AC	10 to 30 DC	5 to 240 DC / AC
Max. switching power [W / VA]	6	10	3	10
Continuous current I_a [mA]	≤ 200	≤ 100	≤ 100	≤ 100
Power consumption [mA] at 24V on-state	20	—	20	—
Voltage drop U_d [V]	≤ 0.5	≤ 3.5	≤ 2	≤ 3
Leakage current [mA]	≤ 0.01	—	≤ 0.05	—
Enclosure rating	IEC529 IP67			
Temperature range T_a [°C]	-10 to +70			
Cable	PVC, 3x0.22 mm², ø4 mm	PVC, 2x0.22 mm², ø4 mm	PU, 3x0.22 mm², ø3 mm	PU, 2x0.22 mm², ø3 mm
Cable length	2 m or 0.15 m with M8x1 connector		2 m or 0.30 m with M8x1 connector	
Housing material	plastic, metal sheet		plastic, metal fixing device	
Integrated protection	against short circuit, overvoltage and reversing of polarity	—	against short circuit, overvoltage and reversing of polarity	—

Order codes

Type	Switching output	Max. switching frequency [Hz]	Function indicator	Order codes for switch with connection	
				cable 2 m	cable 0.15 (0.30) m with M8x1 connector
KT-21P	PNP	1000	LED	2202 5111 0210 2000	2202 5111 0215 0000
KT-21R	reed	200	LED	2201 5102 0110 2000	2201 5102 0115 0000
KT-50P	PNP	1000	LED	2202 5011 0110 2000	2202 5011 0115 0000
KT-50R	reed	200	LED	2201 5002 0110 2000	2201 5002 0115 0000

ℹ Please read carefully technical information on page 3-9.

## How to fix switch on cylinder and which series for which cylinder type

Pneumatic cylinder type	Switch can be used					
	directly	with PM-x[1] bracket	with PI-x [2] bracket	with PBL-1 bracket (up to Ø63)	with PAB bracket (up to Ø100)	with bracket for dovetail groove
VDMA 24562, Ø32 to 100 mm			✓ KT-21			
VDMA 24562, Ø125 to 320 mm, CNOMO		✓ KT-21				
Compact, ISO 15552 (order code 10201...), short stroke Ø160 and 250 mm	✓ KT-50					
DIN ISO 6432					✓ KT-21	
Short stroke, Ø20 to 100 mm						✓ KT-50
PDSW, anti-corrosive - hygienic clean, rotary actuator, Ø 20 to 40 mm				✓ KT-50	✓ KT-21	
Rotary actuator, Ø50 and more mm		✓ KT-21				
With guide unit U or H [3]		✓ KT-21		✓ KT-50	✓ KT-21	

1) PM-6 bracket is for cylinders with tie rods diameter 5 to 6 mm (cylinders dia. 32, 40), PM-8 bracket is for tie rod diameter 8 mm (cylinders dia. 50, 63, 160 to 320), PM-12 bracket is for tie rod diameter 12 mm (cylinders dia. 80 to 125 mm)
2) PI-1 bracket is for cylinders dia. 32 and 40 mm, PI-2 is for cyl. dia 50 and 63 mm, PI-3 is for cyl. dia 80 mm and PI-4 is for cyl. dia 100 mm
3) We recommend to use bracket for tube with cylinder with guide unit, to provide sensing in section, where the guide unit is mounted. The guide body inhibits using of bracket for tie rod / profile. On the other side, or in the area out of guide body, bracket for tie rod / profile can be used.
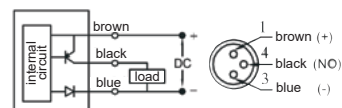
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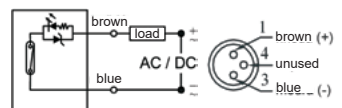## Dimensions of series KT-21

Sensing area
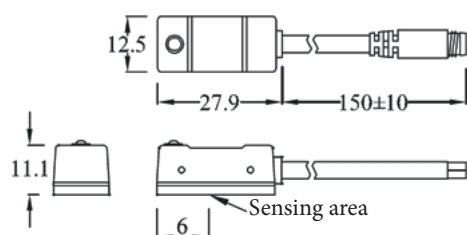
Dimensions of series KT-50

Sensing area
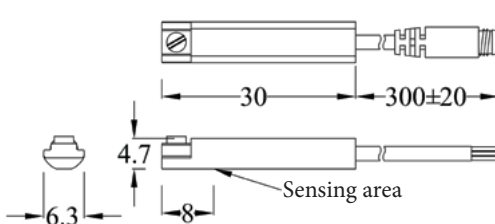
Connection of KT-xxP

brown (+)
black (NO)
blue (-)

Connection of KT-xxR

brown (+)
unused
blue (-)

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Brackets for switches series KT-21

Bracket PM-x for cylinder tie rods

Type	Order codes	For cylinder	Tie rod
PM-6	2290 5119 0000 0000	Ø32, 40	Ø5 to 6
PM-8	2290 5120 0000 0000	Ø50, 63, 160 to 320	Ø8
PM-12	2290 5121 0000 0000	Ø80 to 125	Ø12

Type	A	B	C	D
PM-6	19	31.0	6.5	12
PM-8	20	34.5	8	12
PM-12	20	35.5	11.5	12

Bracket PI-x for profile tube

Type	Order codes	For cylinder
PI-1	2290 5115 0000 0000	Ø32, 40
PI-2	2290 5116 0000 0000	Ø50, 63
PI-3	2290 5117 0000 0000	Ø80
PI-4	2290 5118 0000 0000	Ø100

It is necessary to use PM-12 bracket for cylinder to VDMA 24562 dia. 125 mm, and bracket PM-8 for cylinders dia. 160 to 320 mm
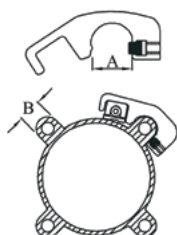
Type	A max	B max
PI-1	11.15	10.4
PI-2	14.10	13.5
PI-3	15.45	15
PI-4	16.3	16

Bracket PAB for tube

Type	Order codes	For cylinder
PAB	2290 5114 0000 0000	up to Ø100

We recommend to use bracket for tube with cylinder with guide unit, to provide sensing in section, where the guide unit is mounted. The guide body inhibits using of bracket for tie rod / profile. On the other side, or in the area out of guide body, bracket for tie rod / profile can be used.

How to use PAB bracket:

Screw head

Mark hole

Pin

Clamp slot

Step 1:
Start by keeping screw 3 to 4 turns into barrel nut on the end of band assembly

Step 2:
Place the screw head into clamp slot and wrap the band around the cylinder, position the pin with the nearest hole on the band and mark the hole with permanent marker

Step 3:
Remove clamp assembly from the cylinder. Locate the marked hole and cut the band at midway between next two adjacent holes

Cut here
Marked hole
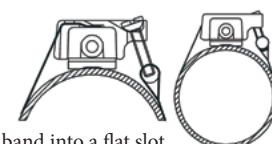
Step 4:
Insert cut of the band into a flat slot opposite from the clamp slot. Place the chosen hole over the pin and bend the band firmly down with thumb pressure. Then wrap the band around the cylinder barrel and re-insert screw head into clamp. Position the switch and tighten.

Brackets for switches series KT-50

Bracket for dovetail groove

Order codes	For cylinder
2290 2011 0000 0000	Ø20 to 100

Bracket PBL-1 for tube

Type	Order codes	For cylinder
PBL-1	2290 5014 0000 0000	Ø10 to 63

Cables with M8x1 connector

| Description	Order codes - straight connector	Order codes - elbow connector
Connector only for cable max. 3x0.25 mm², max. dia. 5.5 mm	2291 0001 0000 0000	2291 0002 0000 0000
PVC cable with connector 3x0.22 mm², length 2m	2291 0010 0000 0000	2291 0015 0000 0000
PVC cable with connector 3x0.22 mm², length 5m	2291 0011 0000 0000	2291 0016 0000 0000
PVC cable with connector 3x0.22 mm², length 10m	2291 0012 0000 0000	2291 0017 0000 0000

Warning

Do not exceed specification, permanent damage to the sensor may occur.

Rules for using of proximity switches

1. For reed switch type sensors, polarity must also be observed for the proper functioning of LED. Connect the brown wire in series with load positive (+) and the blue wire to negative (-) of power source. If the polarity is reversed, reed switch remains functional but LED will remain in "OFF" state.
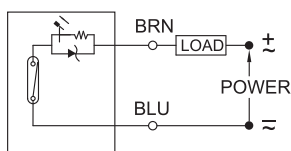
2. For solid-state type sensors , polarity must also be observed . Connect brown (red for SP-472 switch) wire to the positive (+) and the blue to the negative (-) of DC power source. The black (white for SP-472 switch) wire must connect to the load only. If the black (white for SP-472 switch) wire is accidentally connected to the power source, permanent damage to the sensor may occur.

(NPN Output)   (PNP Output)
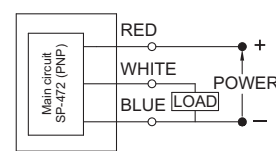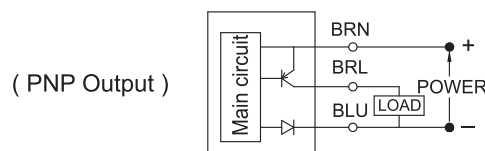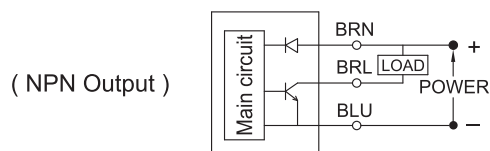
3. An external protection circuit may be required if the reed switch is used with inductive load. For DC voltage, the diode must be connected, for AC voltage, the RC circuit must be connected as shown below.

DC Power   AC Power   R: 2,7K Ω
                                     C: 0,1μf/600V
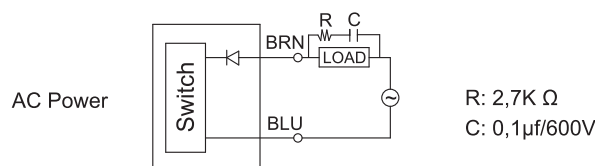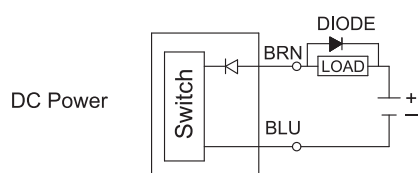
4. Keep sensors away form stray magnetic field to prevent malfunctions.

5. When using reed switch with capacitive load or if the lead wire length exceed 10 meters, an inductor must be installed in series.

10M or more
560~1000 μ H
LOAD
As close as possible