Design and applications

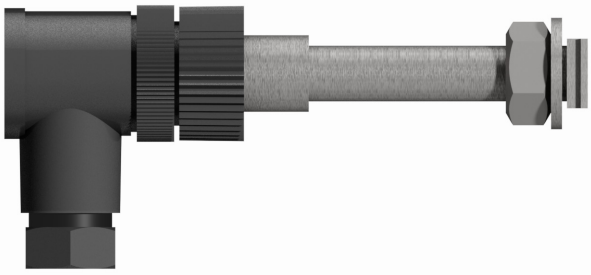
The limit switches MSK1, MSK12 and MSKW are used for remote monitoring of measurement limits. They can be used in various Kirchner and Tochter model series.

The design consists of an M8x1 threaded sleeve and an angular coupling. The threaded sleeve contains a reed switch and a holding magnet. The holding magnet enables a bistable switching behaviour. The limit switch is actuated by a permanent magnet installed in the float. If it passes the limit switch, the contact switches.

The connection is made using a 4-pole M12x1 user-configurable right-angle plug made of PA and PBT.

Depending on the type of device, it is mounted either on a guide groove or a guide rod. The limit switches can be adjusted over the entire measuring range.

Both, variable area flowmeters and level gauges, can accommodate several limit switches. This enables monitoring of several measuring points.



MSK

- **Normally closed, normally open or changeover contact**
- **easy to adjust**
- **requires no power supply**
- **long lifetime**
- **reliable due to simple mode of operation**
- **can be used in potentially explosive areas**

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Version 1.0

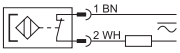
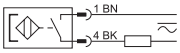
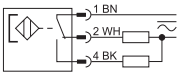
MSK1 / MSK12 / MSKW

Limit value switches

Type series

MSK1	limit value switch (Normally closed, bistable)
MSK12	limit value switch (Normally open, bistable
MSKW	limit value switch (Changeover, bistable)

Technical data limit value switches

Design	MSK1	MSK12
Switching voltage	50 V AC/75 V DC	50 V AC/75 V DC
Switching current	max. 0,5 A	max. 0,5 A
Switching capacity	max. 10 W/VA	max. 10 W/VA
Dielectric strength	230 V AC/400 V DC	230 V AC/400 V DC
Temperature range[1)]	-20 ... +90 °C	-20 ... +90 °C
Switching function	normally closed	normally open
Connection		
Design	**MSKW**	
Switching voltage	50 V AC/75 V DC	
Switching current	max. 0,5 A	
Switching capacity	max. 5 W/ VA	
Dielectric strength	110 V AC/200 V DC	
Temperature range[1)]	-20 ... +90 °C	
Switching function	change over	
Connection		

[1)] Please note the temperature resistance of the flow meter / level indicator.

Materials limit value switch

Threaded sleeve	CuZn nickel plated
Material active surface	Plastic, PA12-GF30

Technical Data

M12 x 1 Right angle connector	
Connector	field-wireable female connector, M12 x 1, angled
Number of poles	4-pole, A-coding
Contacts	metal, CuZn, optalloy-plated
Contact carriers	plastic, PA, black
Grip	plastic, PBT, black
Seal	plastic, FKM
Degree of protection	IP67 only tightened with screws
External diameter of the cable	4 ... 6 mm
Core cross-section/ Clamping ability	max. 0,75 mm²
Screw-in thread	PG 7
Connection mode	screw clamp
Mechanical lifespan	min. 50 contact durability
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 108 Ω
Ampacity	4 A
Forward resistance	≤ 8 mΩ
Ambient temperature Connector	-25 ... +85 °C

Applicable in the following devices

Device type	Type
RA 60 / FA 60	Variable area flow meter
RA 65 / FA 65	Variable area flow meter
RA 77 / FA 77	Variable area flow meter
RA 87 / FA 87	Variable area flow meter
SGK 1 - 3	Variable area flow meter
DST	Bypass flowmeter
NA	Level indicator
NA-V4A	Level indicator

For further information please refer to the data sheet of the respective device type.

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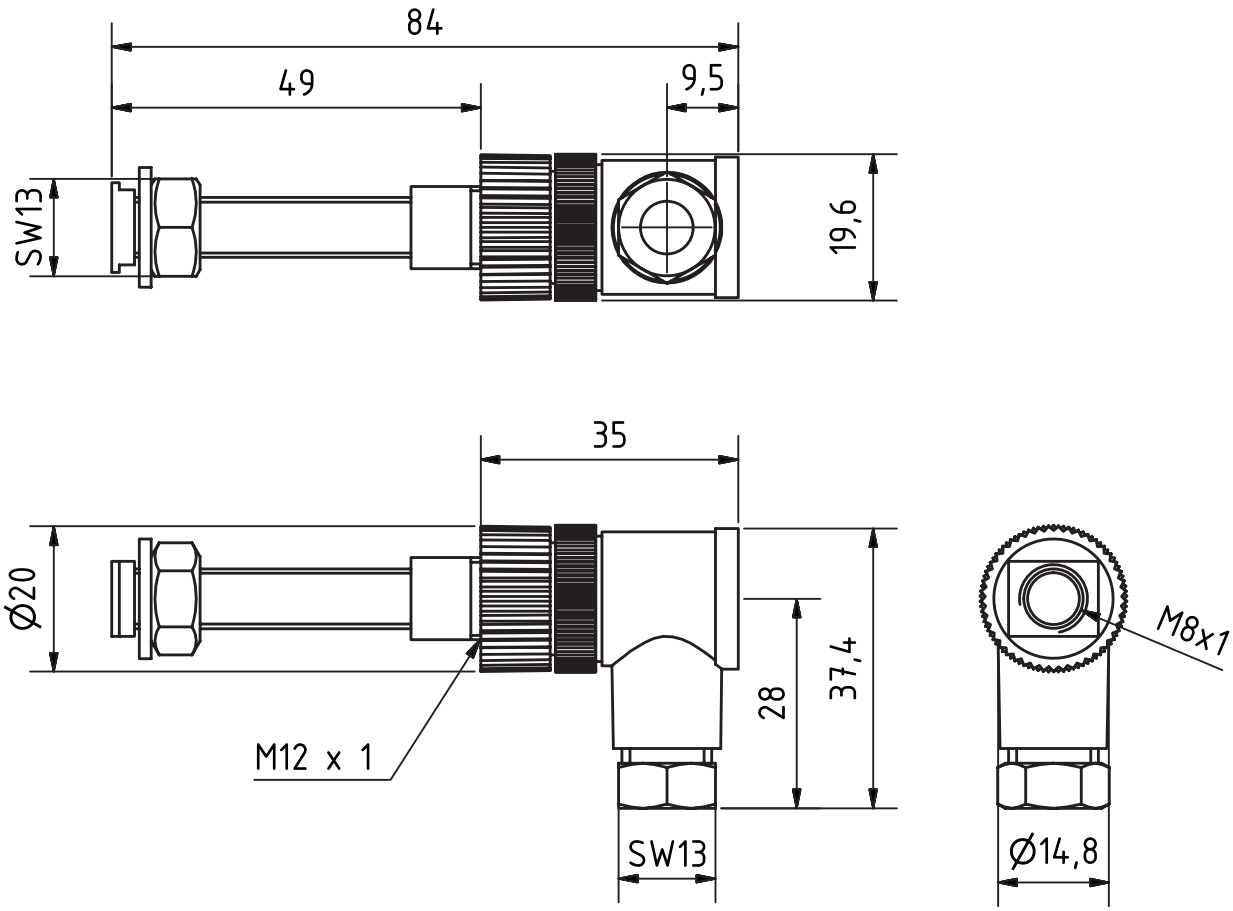
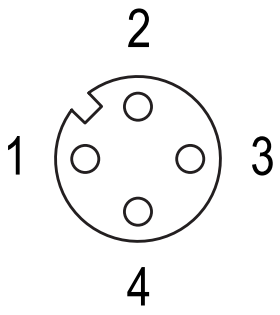


pin assignment



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Low Voltage Directive

Above 50 V AC/75 V DC, electrical components are subjected to the EU Low Voltage Directive (LVD). The user is required to verify their use accordingly.

Application notes

With inductive or capacitive loads, e.g. by contactors or solenoid valves, uncontrollable current and voltage peaks can occur. Such peaks also occur in lines of a certain length or longer, depending on the geometry of the lines. It is therefore recommended to use an additionally available MSR contact protection relay. This increases the switching capacity and prevents the occurrence of inductive and capacitive peaks. It thus guarantees a long service life of the limit switches.

Proper use

The user is responsible for assessing the suitability of the flow meters for his case of application, for use as prescribed and for material compatibility as regards the fluid product used in his process.

The manufacturer shall not be liable for any damage arising from incorrect or improper use of the devices.

The equipment from **Kirchner und Tochter** has been tested in compliance with applicable CE-regulations of the European Community. The respective declaration of conformity is available on request. Subject to change without notice. The current valid version of our documents can be found at www.kt-flow.de.

The **Kirchner und Tochter** QM-System is certified in accordance with DIN EN ISO 9001:2015. The quality is systematically adapted to the continuously increasing demands.

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