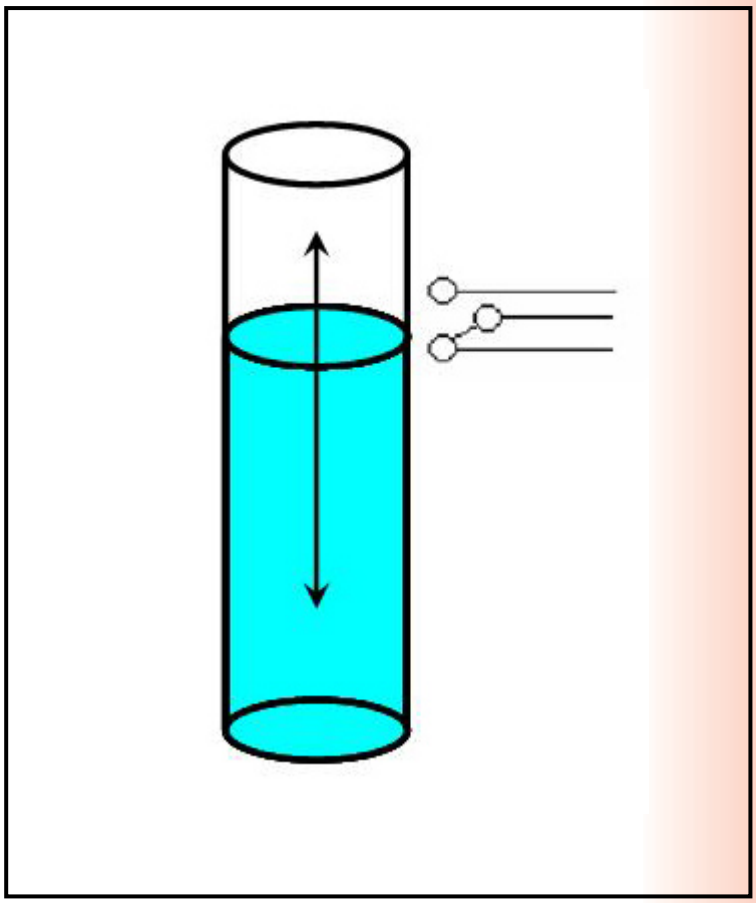
INTRA-AUTOMATION GmbH

Instrumentation and control technology

Electronic measurement and control devices

SWITCHES FOR LEVEL GAUGES



Technical Information

Operation Manual

04/2016

Accessories

THE EXPERT IN LEVEL AND FLOW

Technical data switches

1. General Table

Switch	1690	1690ATEX	LMS-A	LMS-A-EExd	MS09K	MS10 EExd	MS11 EExd
Case	synthetic	synthetic	Al Si 12	Al Si 12	synthetic	Aluminium	Plastic
Contact Function	bistable change-over contact	bistable change-over contact	bistable change-over contact**	bistable change-over contact	break- or make-contact, change-over contact	break- or make-contact, change-over contact	break- or make-contact, change-over contact
Dimensions	20x15x80	20x15x80	65x65x40	∅138x80	110x75x50	120x120x110	110x75x55
Breaking on rupturing capacity	230 V AC/DC 40 W	230 VAC/DC 40 W	220 VAC	220 VAC	250 VAC	250 VAC	250 VAC
	0,8 A	0,4 A	1,5 A	1,5 A	10 A	10 A	5 A
	60 VA	30 VA	80 VA	80 VA	---	---	---
Protective System	IP65	IP65	IP65 DIN40050	IP65 DIN40050	IP65 DIN40050	IP65 DIN40050	IP65 DIN40050
Option	IP67 DIN40050	IP67 DIN40050	---	---	---	---	---
Switch-hysteresis	15 mm	15 mm	8-12 mm	8-12 mm	---	---	---
Fluid-temperature	max. 130°C [266°F]	max. 130°C [266°F]	max. 250°C* [482°F]	max. 250°C* [482°F]	max. 100°C [212°F]	max. 200°C* [392°F]	max. 80°C [176°F]
EEx-protection	---	II 2G Ex m IIC T6 Gb	---	II 2G Ex d IIC T6 Gb	---	II 2G Ex d IIC T6 Gb	II 2G Ex d IIC T6 Gb
Connection	---	---	PG9	4 connection (¾" NPT)	PG11	¾" NPT	M20x1,5
Ambient temperature	-25…+75 °C [-13..+167 °F]	-25…+85 °C [-13..+185 °F]	-20..+55 °C [-7..+131 °F]	-20..+55 °C [-7..+131 °F]	-20..+55 °C [-7..+131 °F]	-20..+55 °C [-7..+131 °F]	-20..+55 °C [-7..+131 °F]

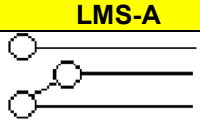
Electric connection with 3-channel plug and earth.
For all switches valid the international standard EN 60529.
* Type LMS-AH with heat-protection-execution through a max. temperature of 400°C [752 °F].
** available with gold contact

2. NI Ex NJ-Switch

Inherent safety EEx-switch, on request with defined error message

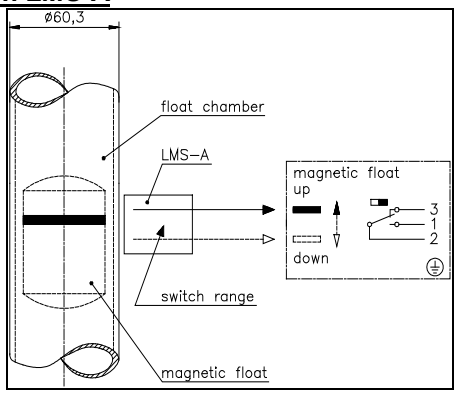
Contact-transmitter	Supply voltage:	8 V DC
	Max. temperature:	60 °C [140 °F]
	Cable connection at the case:	PG11
Switch amplifier	Supply voltage:	220 V +15 % (45…60 Hz)
	Power consumption:	ca. 1,5 W
	Open circuit voltage:	8 V VC
	admit. charge:	4 A/250 V/250 VA
	admit. temperature:	-20…+60 °C [-7…140 °F]
	Ambient temperature	-20…+60 °C [-7…140 °F]
	Fluid temperature	-25… +200°C [-13…+392 °F]

3. Switch diagrams:

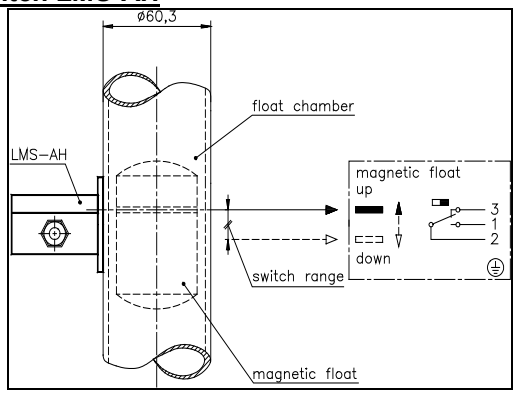
Type:	1690	LMS-A	LMS-AH
Diagram:	 Bistable changeover contact		

Technical data switches

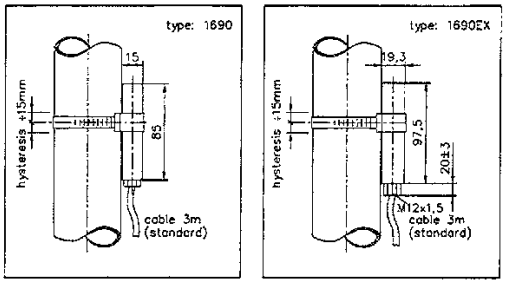
Switch LMS-A

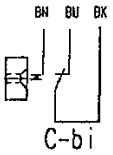


Switch LMS-AH

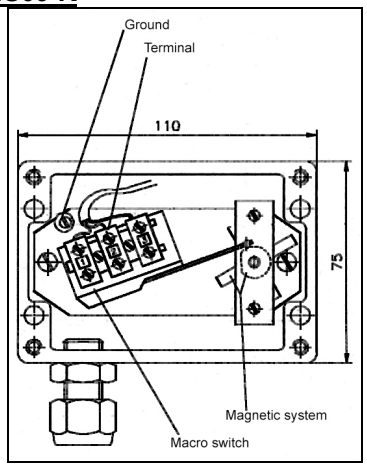


Switch 1690 / 1690ATEX

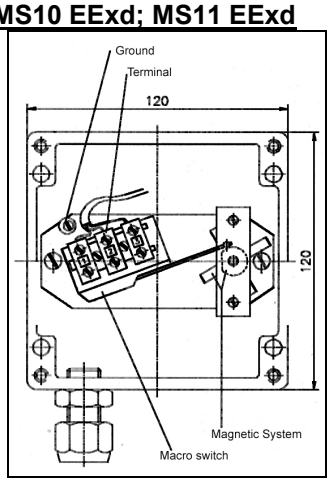




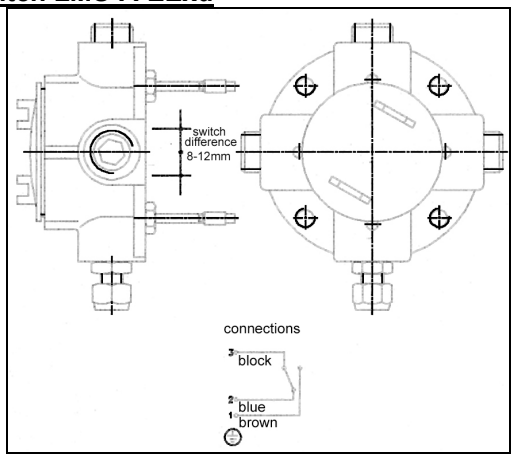
Switch MS09 K



Switches MS10 EExd; MS11 EExd



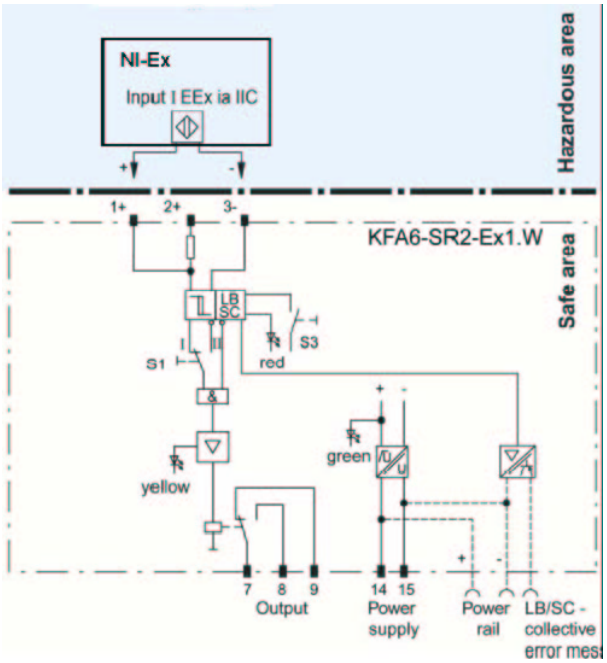
Switch LMS-A-EExd

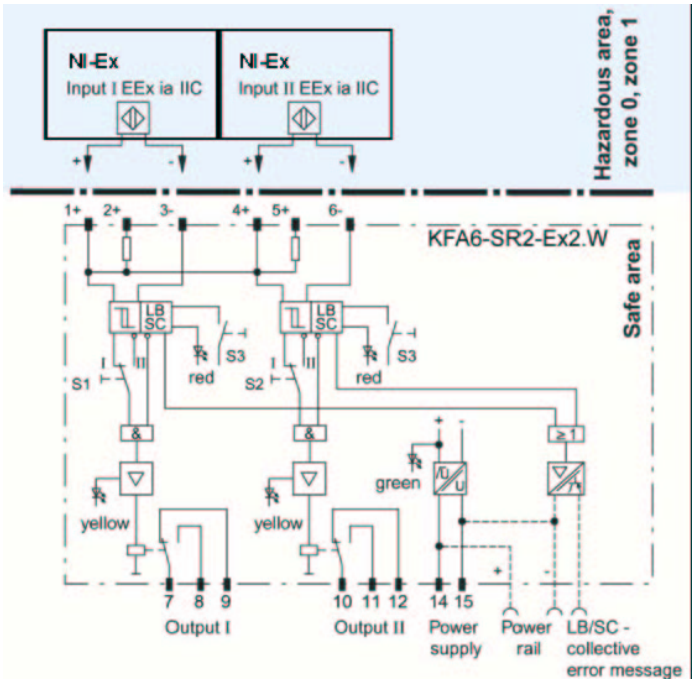


ATTENTION	For **ALL** magnetically actuated switches: The functions NC and NO are dependent on the polarity of the magnetic field and on the direction of movement. Therefore, **BEFORE COMMISSIONING**, move the float downside up and reverse. This will bring the float into its base position.

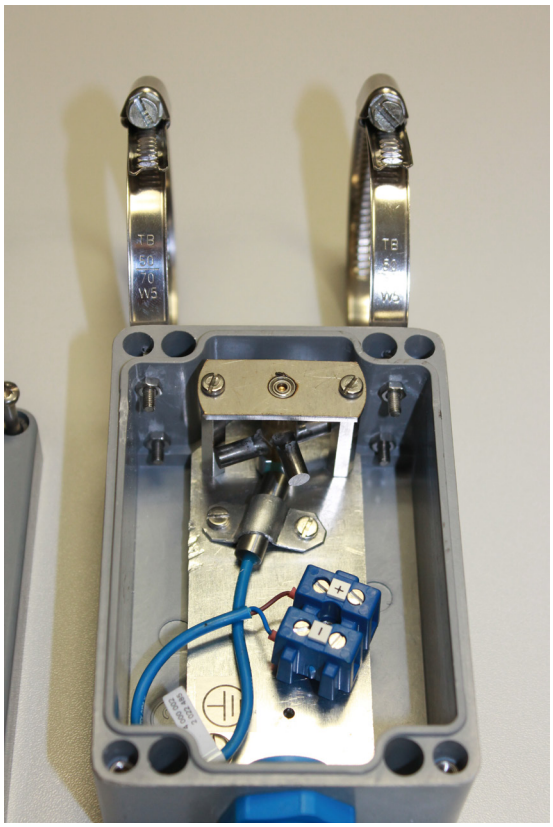
Technical data switches

Switch NI Ex NJ





Switch NI-Ex-NJ



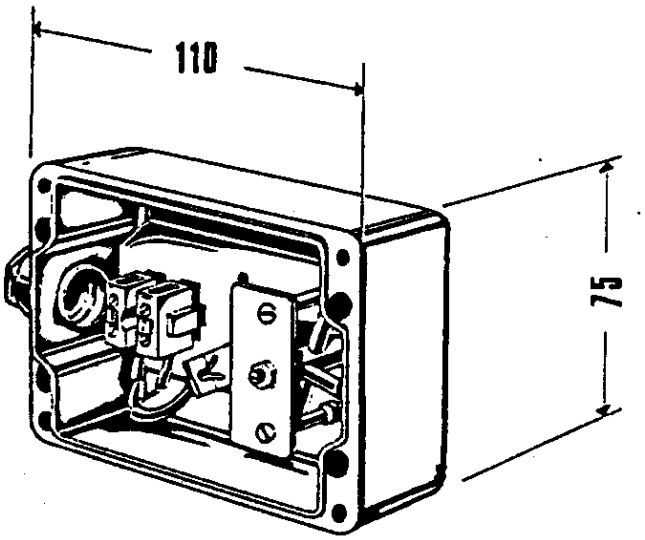
Contact NI Ex

The contact NI-Ex is an inductive contact NJ 1.5-6.5 N
Protective system ATEX ⟨Ex⟩ II 1G EEx ia IIC T6.

Function

Actuation is provided by the magnet installed in the float. Two states are possible:

1.) Base condition: ➔ Switch not damped
2.) Switch condition ➔ Switch damped



Technical data

Electrical connection	:	8 V DC
Temp./ambient temp.	:	60°C [140°F]
Cable connections	:	M20x1,5

Switch relay

KFA6-SR2-Ex1.W	:	for 1 inductive contact EEx ia IIC
KFA6-SR2-Ex2.W	:	for 2 inductive contacts EEx ia IIC

INTRA-AUTOMATION

MESS- UND REGELINSTRUMENTE / MEASUREMENT AND CONTROL

International Headquarters:
Intra-Automation GmbH
Otto-Hahn-Str. 20
41515 Grevenbroich
GERMANY

☎ +49 – (0) 21 81 / 7 56 65-0
📠 +49 – (0) 21 81 / 6 44 92

info@intra-automation.de

Sales Office for the BENELUX:
B.V. Intra-Automation HTP
PO Box 10
4730 AA Oudenbosch
THE NETHERLANDS

☎ +31 – (0)165 – 32 22 01
📠 +31 – (0)165 – 32 29 70

info@intra-automation.nl

www.intra-automation.com