

# Ex level controllers with magnetic switches



Jola Spezialschalter GmbH & Co. KG Klostergartenstr. 11 • 67466 Lambrecht (Germany) Tel. +49 6325 188-01 • Fax +49 6325 6396 contact@jola-info.de • www.jola-info.de



### IRN/HMW/../Ex-1G II 2 G Ex ia IIC T6 Gb magnetic switches

### Mounting and mode of operation of the Ex magnetic switches

The **IRN/HMW/../Ex-1G** ( **II 2 G Ex ia IIC T6 Gb** magnetic switches are accommodated in a housing, which can be fastened to a pipe by means of a tube clamp which is attached to the housing. The housing contains a connection terminal and a microswitch. A magnet is fixed to the lever of the latter. When the Ex magnetic switch is installed and the magnet on the microswitch lever is activated by a magnet moving up and down in the tube, this changes the position of the microswitch lever and an electrical circuit is created.

The Ex magnetic switches have so-called bistable characteristics; i.e. they remain in the switching status caused by the influence of the passing magnet and only switch over when the magnet passes by in the opposite direction.



IRN/HMW/32/Ex-1G ll 2 G Ex ia IIC T6 Gb magnetic switch attached to a tube made of glas containing the float SW 25x140/Glas

## La IRN/HMW/../Ex-1G ⓑ II 2 G Ex ia IIC T6 Gb magnetic switches

These units are not suitable for use on vibrating machines or in places at risk from shock or vibration.

Technical data	IRN/HMW//Ex-1G 🗟 II 2 G Ex ia IIC T6 Gb		
Application	for use in intrinsically safe circuits in potentially explosive atmospheres in categories zone 1 and zone 2. Version for use in mines susceptible to firedamp on request. EC type examination certificate INERIS 03ATEX0164		
Operating principle	magnetically activated <b>bistable</b> microswitch, potential-free changeover contact		
Housing	antistatic (conductive) PP, approx. 65 x 50 x 35 mm		
Protection class	IP65		
Pipe clip material and pipe clip diameter (supplement of the type designation)	<ul> <li>28 = with stainless steel pipe clip, for a tube with an outer Ø of 28 mm</li> <li>32 = with stainless steel pipe clip, for a tube with an outer Ø of 30-32 mm</li> <li>40 = with stainless steel pipe clip, for a tube with an outer Ø of 35-40 mm</li> <li>60 = with stainless steel pipe clip, for a tube with an outer Ø of 50-70 mm</li> </ul>		
Mounting orientation	vertical (cable entry must point downwards)		
Temperature range	+ 1°C to + 60°C		

### Mounting instructions for Ex magnetic switches

To avoid damage to the pipe clip of the IRN/HMW/../Ex-1G II 2 G Ex ia IIC T6 Gb magnetic switch, it is important that you open the clip <u>carefully</u>, <u>never abruptly</u>, <u>and never using force</u>.

We recommend that the pipe clip ends should only be opened just enough to accommodate the pipe diameter in question.

<u>The best way to mount</u> the clip is to lightly press the slightly opened pipe clip ends against the pipe.

Functional diagrams: Representation of the switching point and the switching position when the float has moved past the Ex magnetic switch



Dimensions when the float is used in liquids with a specific gravity of 1 g/cm<sup>3</sup>

#### Functional diagrams: Representation of the switching point and the switching position when the float has moved past the Ex magnetic switch



with built-in magnet)

S

(small PP float with built-in magnet)

Ø 25.5

<u>Ø 23.5</u>

142

S

Ν







These floats are suitable for installation in the potentially explosive atmospheres zone 1 and zone 2 with gaz groups IIA and IIB.



# 

Ex controlling devices with magnetic switches, for signalling or regulation of liquid levels

### Mounting and mode of operation

The IRN/NEM/.../Ex-0G B II 1/2 G c IIC  $\triangle$ T=0 level controllers are fitted with a float and a float rod to which a magnet is attached to the opposite end from the float.

The float follows the level of the liquid and moves the float rod inserted through the screwin threaded nipple of the unit up or down. Above the nipple a guide tube is attached for the float rod and the magnet, and adjustable IRN/HMW/28/Ex-1G ⊕ II 2 G Ex ia IIC T6 Gb magnetic switches are mounted on the outside of the tube. These magnetic switches have socalled bistable characteristics; i.e. they remain in the switching status caused by the influence of the passing magnet and only switch over when the magnet passes by in the opposite direction.



IRN/NEM/148/Ex-0G with 2 magnetic switches IRN/HMW/28/Ex-1G

These units are not suitable for use in turbulent liquids (e.g. in stirrer tanks) nor for use on vibrating machines or in places at risk from shock or vibration.



# IRN/NEM/.../Ex-0G ⓒ II 1/2 G c IIC ∆T=0 level controllers

Technical data	IRN/NEM/148/	IRN/NEM/180/	IRN/NEM/200/	
Application	for use in intrinsically safe circuits in potentially explosive atmospheres • float and float rod: in categories zone 0, 1 or 2, • guide tube fitted with magnetic switches IRN/HMW/28/Ex-1G 🐵 II 2 G Ex ia IIC T6 Gb: in categories zone 1 or 2. Version for use in mines susceptible to firedamp on request. EC type examination certificate INERIS 03ATEX0164			
Float material	s	tainless steel 316 T	Гі	
Float dimensions	148 mm Ø	180 mm Ø	200 mm Ø	
Float rod diameter		6 mm		
Float rod material	stainless steel 316 Ti			
Float rod length	as required, measured from the nipple sealing surface and without float (dimension L, see page 4-2-7)			
Max. length of the float rod in liquids with a specific gravity of 1 g/cm <sup>3</sup> (dimension L)	max. lengths wit	1,200 mm, h other specific gra	vities on request	
Magnet capsule material	antistatic (conductive) PP			
Screw-in nipple	stainless steel 316 Ti, G1			
Option: installation flange for mounting of the unit from the outside	on request			
Float rod guiding piece material	s	stainless steel 316 Ti		
Guide tube	stainless steel 316 Ti, 28 mm Ø x the height based on the float rod length (see page 4-2-7)			
Mounted Ex magnetic switches	IRN/HMW/28/Ex-1G ll 2 G Ex ia IIC T6 Gb (see page 4-2-1 and following)			
Max. number of Ex magnetic switches	as required and	as required and according to the guide tube length		
Mounting orientation	vertical			
Temperature range	+ 1°C to + 60°C			
Pressure resistance	for pressureless application			

#### Functional diagram: IRN/NEM/148/Ex-0G ⓑ II 1/2 G c IIC ∆T=0 level controller with 2 magnetic switches IRN/HMW/28/Ex-1G ⓑ II 2 G Ex ia IIC T6 Gb



The mounting, operating and maintenance instructions joined with each delivered apparatus must be read and followed out.

The units described in this documentation may only be installed, connected and started up by suitably qualified personnel!

Subject to deviations from the diagrams and technical data.

The details in this brochure are product specification descriptions and do not constitute assured properties in the legal sense.