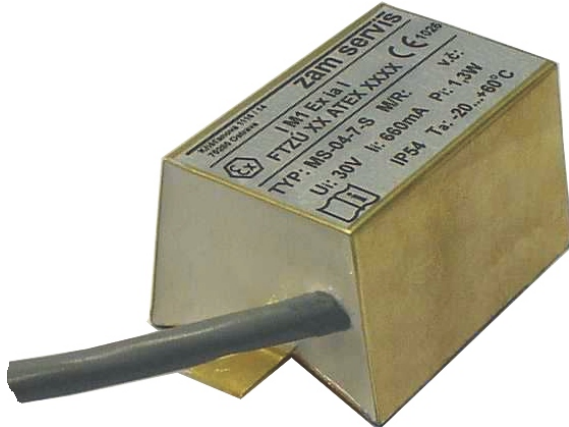




MS-04 Cable Magnetic Switch

Certificate: ATEX



Technical Parameters:

Model	I M1 Ex ia I
Maximum switched voltage	30V
Maximum switched current	1A
Maximum switched output	2W
Standard sensitivities	7A ,12A ,40A, 120A ±20%
Outer cable cross-section	20 - 80 mm
Standard small cable diam.	2.5 m
Outer small cable diameter	5.5 mm
Ambient temperature	-20°C - +60°C
Relative humidity	95% without condensation
Protection	IP 54
Dimensions	60 x 50 x 35 mm
Weight	250 g

Intrinsically safe parameters:

Ui	30V
Ii	660mA
Pi	1.3W

Use:

The MS-04 cable magnetic switch serves for indicating direct current running through the cable. MS-04 is intended for unprotected three phase cables with the diameter of 20 – 80 mm in an environment with a methane explosion hazard e.g. mine machinery trailing cables.

A magnetic sensor is embedded in a brass case with the dimensions of 60 x 50 x 35 mm. It is structurally adjusted for being fixed to the cable surface by means of two draw bands. MS-04 is supplied in several models according to the nominal current sensitivity (7, 12, 40, 120, xx) and with a single switch, LED or Namur output for a secured binary system.

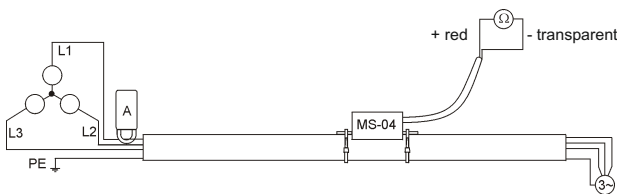
Description:

Alternating current going through the cable forms a magnetic field which is sensed by MS-04. The induced voltage is rectified, amplified and used for opening an output transistor. By slow increasing the current in the cable the transistor resistance continuously decreases up to almost zero resistance at certain current in the cable.

The transistor can switch the values not exceeding 30 V, 1 A, 2 W in a safe environment. However, in an explosion-hazard environment it can only switch the values not exceeding 30 V, 660 mA and 1.3 W with regard to MS-04 intrinsically safe parameters.

A rectifier diode is connected in series with an output transistor in the Diode model. The Namur model contains a 8 k Ω resistor connected in parallel to the transistor and 1 k resistor connected in series, which enables implementing so called secured binary system, when a superior system recognizes an interruption or short-circuit.

MS-04 is supplied with the nominal current sensitivity of 7 A, 12 A, 40 A, 120 A or others. An output screened cable standard length is 2.5 m. Other sensitivities and lengths of the cable can be supplied upon a special order. Outer dimensions of the brass case housing the sensor are 60 x 50 x 35 mm. The sensor is attached to the cable e.g. by means of two plastic draw bands with holders with the dimensions of 10 x 15 mm.



Installation

Sensitivity on various cable types:

Sensor	Cable type	
	1-CBEH 3x35+16+4x4+ main rubber cable (φ 48 mm)	OnGceKz-G 3x25+16+3x2,5 Plastic cable φ37 mm
MS-04-7	7A	10A
MS-04-12	12A	16A
MS-04-40	40A	60A
MS-04-120	120A	150A

The catalogue has only those selected important parameters for your final decision. For project designs always ask for the user's guide for this product and any engineering consultation about possible uses.