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Current and Current Pulse Sensor

Type M715A...

Indirect Current Measurement

The current and current pulse sensor Type M715A... is used for the measurement of DC and AC current as well as current pulses.

- Small dimensions
- Measuring range ±300 A (overload safe)
- Sensitivity 12 mV/A/10 V
- Shock resistant up to 200 g
- Low weight

Description

The current pulse sensor is based upon the hall measuring principle and enables the indirect current measuring in a wire. The benefits are: The measuring signal is galvanically isolated from the live wire, its current should be measured. Furthermore it is not necessary to split the live wire. Variations in the live wire produces a variation in the magnetic field around the wire. A hall sensor with toroidal core detects the variations of the magnetic field and delivers an output voltage, which is proportional to the current.

The sensor is available with ID module. Customized cable lengths and connectors with customized pin assignments are optional available.

Application

The sensor is used for measuring current during durability tests of e.g. battery connections. Because the sensor reacts on every change of the magnetic field, there should be no conducting circuits, electric engines or ignition coils nearby when mounting the sensor. If the sensor is to be used during a crash test, the slide closure must be locked against unintentional opening. The live wire must be placed centrically through the sensor. Otherwise there could be different sensitivities, according to the placing of the live wire.

The wire (diameter between 13,5 mm and 15 mm) to be checked is passed through the sensor vertically. Because of its slide closure the wire input in the sensor is very easy and fast. For safely fixing the sensor has two holes for mounting screws (M4x10).

Technical Data

Measuring range[1] (typ.) overload 400 A	A	±300
Sensibility[2] (typ. / min. / max.)	mV/A/10 V	12 / 8 / 15
Amplitude non-linearity (typ. / max.) in range ±150 A	%	0,5 / 1,5
Hysteresis (typ. / max.) in range ±150 A	%	0,5 / 1,5
Zero measurand output (typ. / max.)	mV/10 V	±40 / ±100
Polarity (during current flow in direction of arrow)		positive
Frequency response bandwidth ±3 dB	kHz	0 ... 5
Supply voltage[2]	VDC	4,5 ... 10,5
Supply current (typ.)	mA	10
Shock resistance (pulse width >2 ms)	g	200
Stray current sensitivity[3] (max.)	mV/A/10 V	3
Insulation resistance[4] (min.)	MΩ	>90
Operating temperature range	°C	–30 ... 80
Storage temperature range	°C	–40 ... 90
Housing material black anodized		AL alloy
Mass	grams	50
Dimensions	mm	34,5x33x22,5
Appropriate for wire diameters of	mm	13,5 ... 15

All values are typical at 25 °C and rated at 10 V sensor excitation, unless otherwise specified.

1) Calibration up to 150 A
2) Sensitivity changes non-linear with supply voltage. Please tell us with your order if your supply voltage differs to 10 V
3) Influence of currents outside the sensor
4) All wires to screen (GND), with 10 V (DC)

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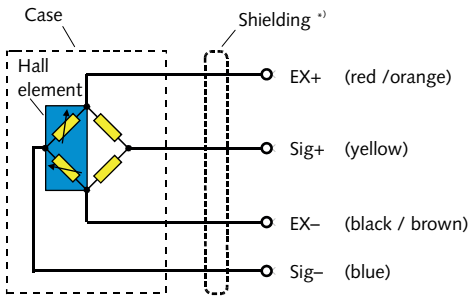

*) Shielding on connector housing (GND).

Fig. 1: Schematic diagram

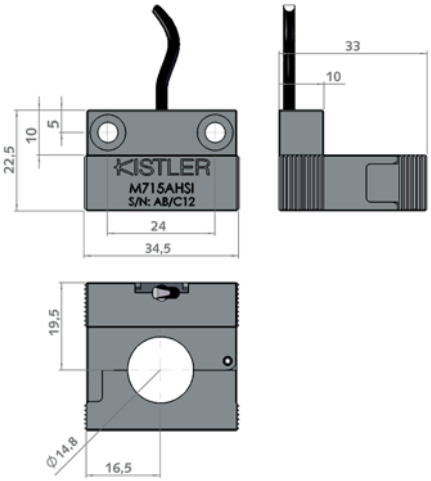

Fig. 2: Dimensions in mm

Ordering Key

Type M715A ☐☐☐☐☐

Measuring Range

±300 A	**HSIB**

Cable Length before Electronics

0 cm	**00**
<10 cm (digit x 1 cm)	**C#**
10 cm ... 9,9 m (digit x 10 cm)	**##**
10 m ... 90 m (digit x 10 m)	**D#**

Additional Electronics

Sensor detail, as per type declaration current and current pulse TP-650-6	**#**

Cable Length after Electronics

0 cm	**00**
<10 cm (digit x 1 cm)	**C#**
10 cm ... 9,9 m (digit x 10 cm)	**##**
10 m ... 90 m (digit x 10 m)	**D#**

Connector

Conn. type, as per TP-600	**#-**
Conn. assignment, as per TP-600	**-#**

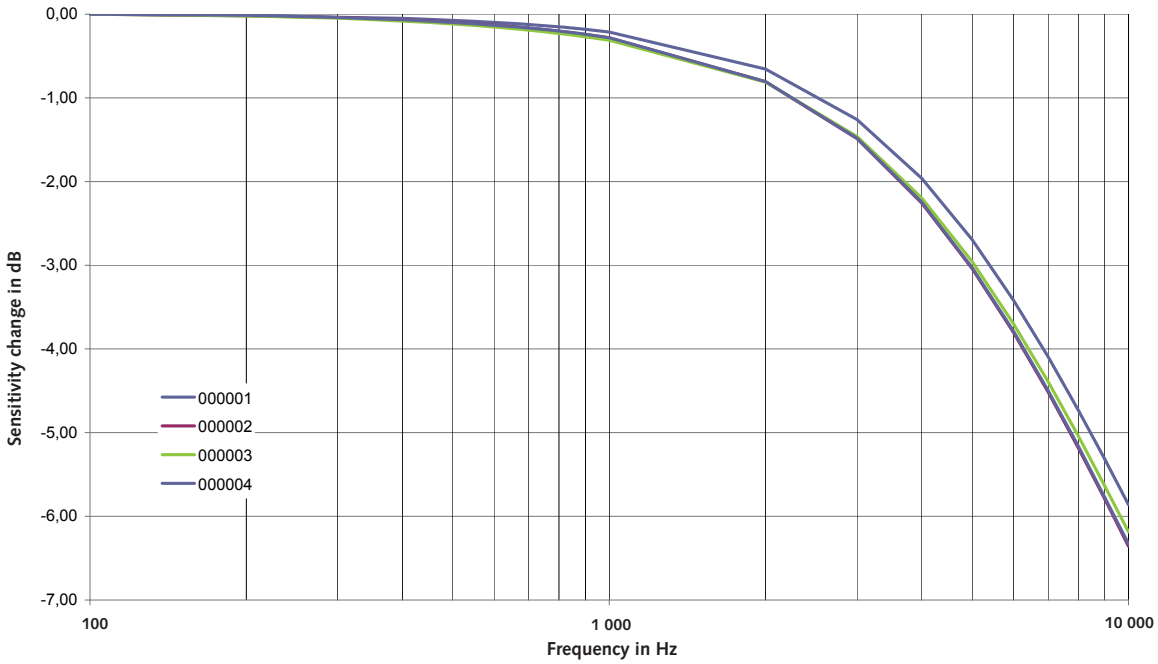

Fig. 3: Frequency response

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