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Signal Processing Module

Type M635A...

High-voltage

The high-voltage signal processing module Type M635A... is used in crash measuring technique for potentialfree measuring of voltages up to 1 000 V with an accuracy better than 0,1 %FS.

- Input voltage ±1 000 V
- Galvanic isolation up to 1 500 V
- Shock resistant up to 200 g
- Band width (3 dB) up to 10 kHz
- Linearity error better ±0,025 %
- ID module integrable

Description

The high-voltage signal processing module is made of two galvanically separated assemblies: a) the high-voltage part of galvanically separated supply and b) the low-voltage part with clock generator and supply. A clock signal with defined frequency is generated out of the voltage supply. It is amplified by the power converter and transformed to the needed ac voltage. The supply voltage is transmitted to the supply part "isolated power supply unit" via the downstream transformator. It is therefore galvanically separated. The input voltage is modulated to the AC voltage (modulator frequency) of the high-voltage supply and – also galvanically separated – transmitted by the second transformator from the output to the demodulator of the low-voltage part. The demodulator separates the high modulated signal of the modulation frequency and conducts it to the following instrumentation amplifier. The standardized bipolar output signal is available with output voltages of ±0,5 ... ±2,5 V. The optional available ident module, e.g. UPS module, is readout and addressed by the KAL-wire of the measuring system. The Dallas-ID is readout via the 1-wire-bus. In order to apply the ident functionality, the used measuring system must support the particular functions. The high-voltage cable is supplied with two pin plugs. More information on this subject is available on request.

Application

The high-voltage signal processing module Type M635A... is used in crash measuring technique for potentialfree measuring of voltages up to 1 000 V with an accuracy better than 0,1 %FS. Typical application areas are the potential-free measurings of energy storages and electrical links of electric, hybrid and combustion vehicles.

Technical Data

Input voltage	V	±1 000
Output voltage	V	±2,5
Output DC voltage potential[1]	V	5
Sensitivity amplification (typ.)	mV/V	2,5
Resolution (noise)	mV	<2,5
Input resistance	MΩ	10
Accuracy[2]	%	<0,1
Amplitude non-linearity (FS)	%	0,025
Band width (3 dB)	kHz	0 ... 10
Galvanic isolation		
CMV, input - output[3]	V rms max.	1 500
Stability with temperature change		
ZMO change	µV/°C	±120
sensitivity change	%/°C	±0,0075
Zero measurand output	mV	<1
Output resistance (±1 %)	Ω	2x560
Supply voltage (±0,2)	V	10
Current consumption	mA	<30
Crash firmness[4]	g	200
Operation temperature range	°C	0 ... 70
Storage temperature range	°C	–40 ... 85
Dimensions	mm	87x68x24,6
Ident module	unit	1

All values measured at 25 °C, related to 5 V output potential.

[1]   All measured values in this specification relate to the output ±2,5 V, related to 5 V output d.c. voltage potential
[2]   Inc. linearity, hysteresis (FS; optional 0,01)
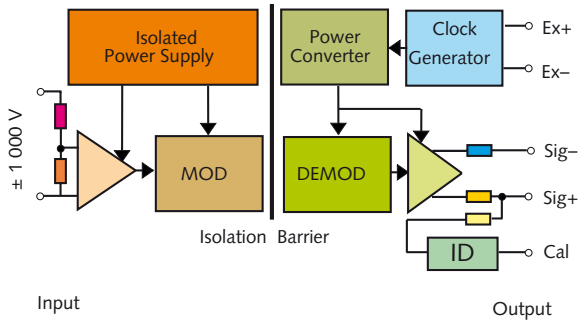[3]   According to ANSI/IEEEC37.90.1
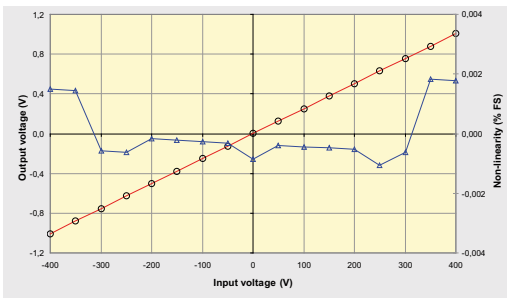[4]   10 ms half sine

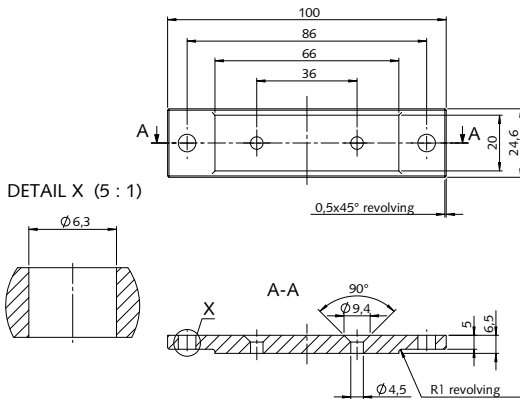Fig. 1:   Schematic diagram
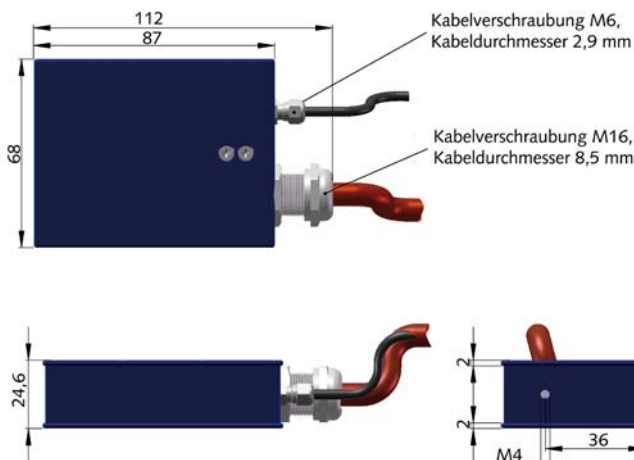

Fig. 2:   Voltage chart

Fig. 3:   Mounting plate

Fig. 4:   Dimensions

Included Accessories

• None

Optional Accessories   Type No.

• Mounting plate (screws incl.)   M070MP635

Ordering Key

Type M635A ☐ ☐ ☐ ☐ ☐ ☐

Output

Standard Application

±0,5 V, DC potential 5 V[1]	HM1

On Request

±2,5 V, DC potential 5 V	HM0
±0,5 V, DC potential 2,5 V	HM2

Plug Type HV

Pin plug 0,5 m cable	A
Pin plug 8 m cable	B

Cable Length before Additional 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

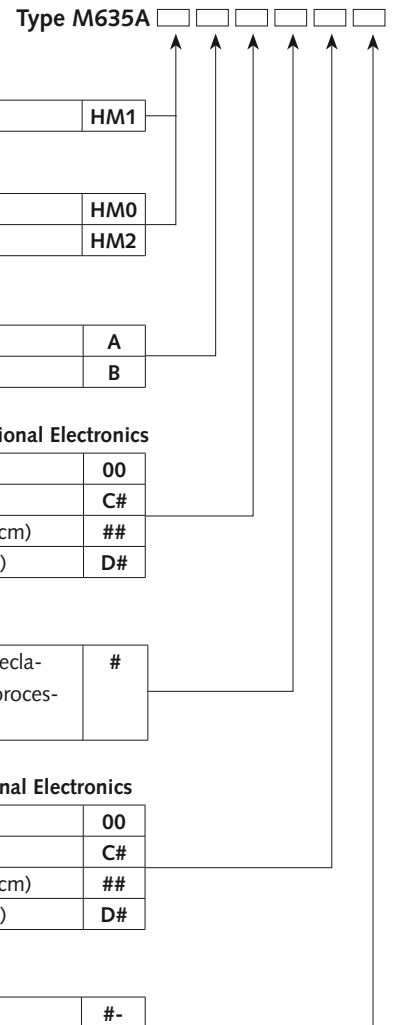| Sensor detail, as per type declaration high-voltage signal processing module TP-650-17	#

Cable Length after Additional 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	-#

[1]   UPS module only available with this option

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the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.