KISTLER
measure. analyze. innovate.

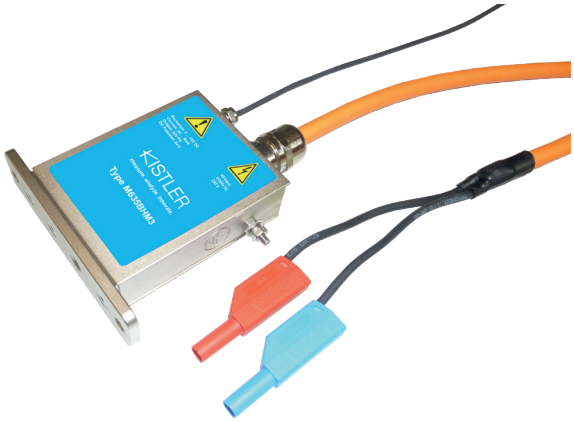
Signal processing module

Type M635B...

High-voltage

The high-voltage signal processing module Type M635B... is used in crash measuring technique for potentialfree measuring of voltages up to ±1 000 V DC CAT II with an accuracy better than 0.1 %FS.

- Input voltage
  ±1 000 V DC CAT II
- Certificated according to
  IEC/EN 61010-1:2010 61010-2-030:2010
- Shock resistance 100 g
- Band width (3 dB) up to 10 kHz
- Linearity error better ±0.05 %
- ID module integrable in plug



Description

The high-voltage signal processing module is made of two galvanically separated assemblies: a) the high-voltage part with galvanically separated supply and b) the low-voltage part with voltage converter and amplification.

An alternating voltage is generated from the supply voltage of the measuring system, and a transformer transmits this supply voltage galvanically isolated to the high voltage part. The high measuring voltage is modulated and transmitted galvanically separated to the low voltage part. A demodulator extracts the measurement voltage and feeds it filtered to an instrumentation amplifier. The measured signal output is 2 V full scale (FS) with a DC potential of Ex/2.

The optionally available Dallas ID module is integrated into the connector and then the sensor ID can be read out via the 1-Wire bus, as long as the function is supported by the measuring system used. The high-voltage cable comes standard with two 4 mm lab connectors.

Application

The high-voltage signal processing module Type M635B... is used in crash tests for potentialfree measuring of voltages up to ±1 000 V DC. Typical areas of application are the potentialfree measurement of the shutdown/disconnection of energy storages after a crash or the monitoring of the vehicle chassis for a possible connection to the high-voltage battery.

The high-voltage module can also be used to measure voltages on electrical intermediate circuits of electric, hybrid and combustion vehicles.

Technical data

Input voltage CAT II	V DC	±1 000
Output voltage @±1 000 V DC	V	±2.0 ±0.05
Output DC voltage potential	V	Ex/2
Sensitivity (typ.)	mV/V	2.0 ±2.5 %
Resolution (noise)	mV ss	<4
Input resistance	MΩ	>19.6
Accuracy	%	<0.1
Amplitude non-linearity (FS), typ.	%	±0.025
Band width (–3 dB)	kHz	0 ... 10
Galvanic isolation Routine test 2 sek.	V DC	4 700
Stability with temperature change ZMO change	µV/°C	±15
sensitivity change	%/°C	0.0075
Zero measurand output	mV	<5
Output resistance (±1 %)	Ω	2x750
Shunt resistor (±1 %)	kΩ	18
Supply voltage = Ex	V DC	5 ... 15

M635B_003-410e-11.19

KISTLER
measure. analyze. innovate.

Technical data, continuation

Power consumption, max.	mW	135
Current consumption		
@15 V typ.	mA	9
@10 V typ.	mA	12
@5 V typ.	mA	20
Crash firmness half sine with 6 ms	g	100
Operation temperature range	°C	–20 ... 70
Relative humidity, not condensed	%	<80*
Altitude	m	<2 000
Degree of pollution		2
Storage temperature range	°C	–20 ... 80
Dimensions without cable outlets/screws and mounting plate	mm	87x68x24.6
ID module (optional, in plug)	unit	1
Mass, approx. (with 8 m high-voltage cable and 6 m low-voltage connecting cable)	g	1 500

All values measured at 25 °C.

* Maximum relative humidity 80 % at temperatures up to 31 °C, decreasing linearly up to 50 % relative humidity at 40 °C

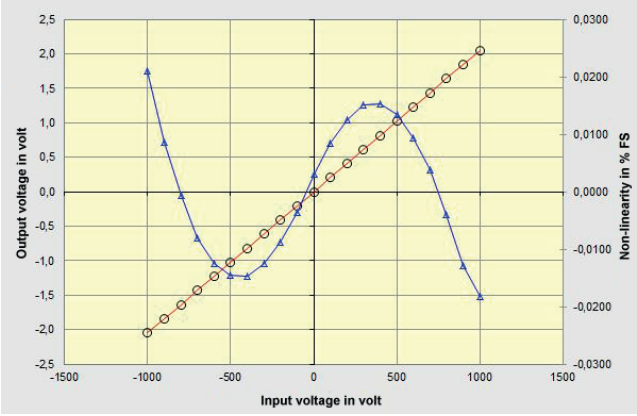


Fig. 2: Voltage chart DC

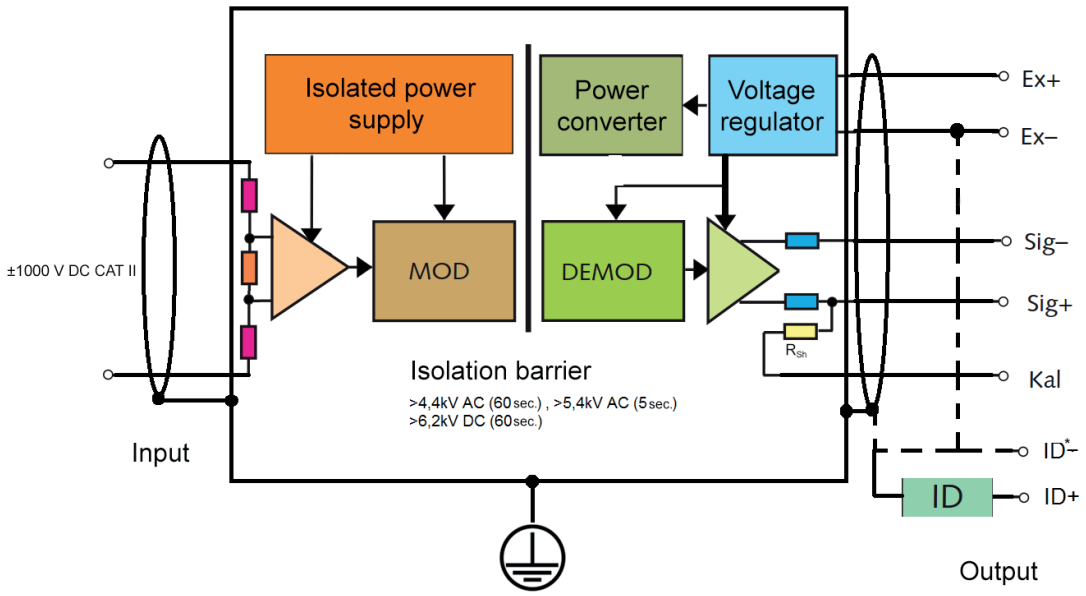


Fig. 1: Schematic diagram

*) ID– either connected to separate pin, to Ex– or to screen

M635B_003-410e-11.19

KISTLER
measure. analyze. innovate.

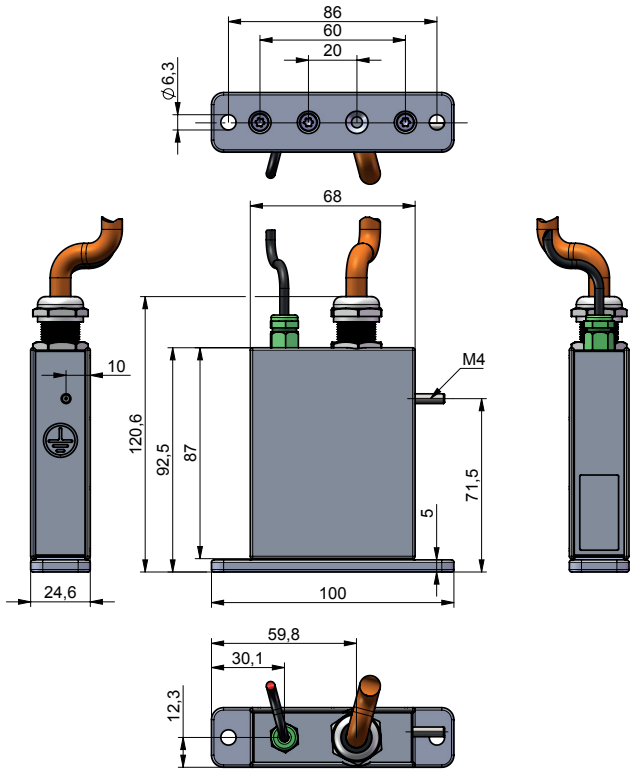


Fig. 4: Dimensions

Ordering key

Type M635B □□□□□□□

Output

±2.0 V; DC potential Ex/2	**HM3**

Plug type HV

0.5 m cable with 4 mm lab plug	**A**
8 m cable with 4 mm lab plug	**B**
1.5 m cable with 4 mm lab plug	**C**

Cable length LV before additional electronics

0 cm	**00**
<10 cm (digit x 1 cm)	**C#**
10 cm ... 9.9 m* (digit x 10 cm)	**##**

Additional electronics

Without	**A**
Dallas ID module	**C**
Shunt resistance	**N**
Shunt resistance and Dallas ID module	**P**

Cable length after additional electronics

0 cm	**00**
<10 cm (digit x 1 cm)	**C#**
10 cm ... 9.9 m* (digit x 10 cm)	**##**

Connector

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

*) Maximum cable length at LV connecting side: 10 m

Included accessories	**Type No.**
• Mounting plate (screws incl.) M6x12 mm, tightening torque 5 N·m	on request

Optional accessories	**Mat.e No.**
• Grounding cable 1 m with cable lugs M4, on both sides, tightening torque 1.4 N·m	55188308

M635B_003-410e-11.19