KLARI-MOD SC 2-1000V

THE REQUIREMENTS

- Safe measurement at high voltage potentials up to 1 kV.
- Dynamic current or voltage measurement for automotive hybrid or electrical power train with CAN data output.
- One measuring channels, usable for current or voltage measurement.
- Easy use of the measurement technology for various applications.

FIELDS OF APPLICATION

Use in laboratories and automotive:

- Measuring current or voltage in the DC circuit.
- Measuring current or voltage in the AC circuit.

THE CONCEPT

- KLARI-MOD$_{SC2-1000V}$ provides an electrical isolation of 1000 V DC between measuring circuit and data output as well as measuring channels.
- Measuring channel is equipped with an ASIC which has 5 measuring ranges with autorange functionality.

THE DESIGN

- Compact and robust measuring module in grouted casing (potting compound).
- Optimal adaption to the measuring task by a number of pluggable PROBES for current, voltage and temperature measurements with automatic PROBE-identification.
- Manifold configuration possibilities via PC. The corresponding configuration can be stored in the measuring module.

YOUR BENEFIT

- Safe measurement due to 1 kV isolation.
- Investment protection by easy adaption of the measuring technology to different measuring tasks.
- Precise and reproducible measured values in every measuring range by +/-15 Bit resolution.
- Correct measurement results by automatic PROBE identification with calibration value transmission.
- Easy implementation of the CAN data export in common CAN loggers and analysis tools via supplied CAN data base.
- Quick measurement results: The Klaric team will give you reliable and non-bureaucratic support, if you have questions and need support.

KLARIC
Individual Solutions for Measuring and Testing

KLARI-MOD SC 2-1000V

SPECIFICATIONS

Inputs / characteristics	• 1 galvanically isolated measuring channel with an ASIC • current or voltage PROBE pluggable • Measuring range: depending on the connected PROBE, examples see table
Resolution	• ± 15 Bit/measuring range • 5 measuring ranges with selectable autorange function
Accuracy	• ±1% from measuring value ± 3 bit per measuring range (temperature range -40…+85°C)
Sample rate	• Single channel mode: max. 8000 measuring values/sec., • continuous measurement with averaging over the measurement period, measurement period adjustable
Additional functions	• Selectable data output (CAN and/or USB-2.0) • CAN data export – parameter driven data output (Baud rate, identifier etc.) • Integrated CAN termination, disengageable via software • Automatic PROBE identification • Calibration value of the PROBE is considered at measuring value processing
Outputs	• 1 CAN output, parameter driven • Potential-free High-Speed-CAN with up to 1 MBaud
Time basis	• ~30 µs resolution
Casing (LxWxH)	• Plastic casing (potting compound), approx. 125x65x35 mm
Power supply	• 6,0…50 V DC
Current consumption	• Approx 200 mA at 12 V DC
Configuration	• via CAN or USB-2.0. Configurations can be set, created, managed and loaded into the measurement module.
Operating modes	• Multichannel mode with: ○ Autorange function for all channels over all measuring ranges ○ Difference mode and limit mode for minimizing the data rate with adjustable Δ or limit values ○ Adjustable measurement periods per measuring channel ○ Adjustable averaging for all measuring channels for minimizing the data volume
Temperature range	• -40…+85°C for the measuring module • -40…+130°C for the shunt
Insulating voltage	• 1000 V DC
Protection class	• IP65

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Examples for measuring ranges and measurement value resolutions								
Range/ Gain	200 V PROBE		1000 V PROBE		1 mΩ PROBE		200 µΩ PROBE	
	Measuring range	Resolution/ bit	Measuring range	Resolution/ bit	Measuring range	Resolution/ bit	Measuring range	Resolution/ bit
1	+/-200 V	16,344 mV	+/-1000 V	120 mV	+720 A -300 A	24 mA	+3600 A -1500 A	120 mA
6	+/-80 V	2,724 mV	+/-600 V	20 mV	+/-120 A	4 mA	+/-600 A	20 mA
24	+/-20,43 V	681 µV	+/-150 V	5 mV	+/-30 A	1 mA	+/-150 A	5 mA
50	+/-10,215 V	340,5 µV	+/-75 V	2,5 mV	+/-15 A	500 µA	+/-75 A	2,5 mA
100	+/-5,1075 V	170,25 µV	+/-37,5 V	1,25 mV	+/-7,5 A	250 µA	+/-37,5 A	1,25 mA

The measuring inputs are galvanically insolated from each other and from the electronic measuring equipment.
All interfaces and the power supply are galvanically insolated.
Measurements are possible in plus and minus path.

STANDARD SCOPE OF DELIVERY

- KLARI-MOD SC 2-1000V measuring module, insulation tested,
  PROBE inputs and MS3 voltage measuring inputs scaled in works
  order number: IMMSC-ZU003-0004
  Please order KLARI-PROBES separately!
- PC software for the configuration via USB
- CAN data base and documentation on CD-ROM
- We will give you reliable and competent support,
  if you have question or need support.

On demand we offer manufacturers calibration with certificate.

ACCESSORIES

Harness IP65

This harness is used for connecting the measuring modules to a notebook or PC.

The following signals are led through separately:

- CAN, Sub-D, 9-pole, female
- Supply of the module

  IMKAB-01105-0000 - 1 m

  IMKAB-04105-0000 - 4 m

  IMKAB-10105-0000 - 10 m

KLARI-PROBES 1000 V

Standard measuring adapters for currents and voltages

(Selection. For further types see data sheet "KLARI-PROBES$_{1000V}$")

- **HV-LI current-PROBEs,** isolation 1 kV,

  100 mOhm, PBV, measuring range 0…-3 A/+7,2 A,
  resolution 2,5 µA/bit*, permanent current ca. 6,5 A**
  IMFIP-45A02-0SHV - 3 m

  50 mOhm PBV, measuring range 0…-6 A/+14,42 A
  resolution 5µA/bit*, permanent current ca. 7,5 A**
  IMFIP-A5A02-0SHV - 3 m

  10 mOhm, PBV, measuring range 0…-30 A/+72 A
  resolution 25 µA/bit*, permanent current ca. 23 A**
  IMFIP-C5A02-0SHV - 3 m

- **HV-I current-PROBEs,** isolation 1 kV,

  2 mOhm, BF-1, measuring range 0…-150 A/+360 A
  resolution 125 µA/bit, permanent current ca. 60 A**,
  MFIP-H4802-0SHV - 3 m

  1 mOhm, BF-1, measuring range 0..-300/+720 A
  resolution. 250 µA/bit*, permanent current ca. 80 A**
  IMFIP-M4802–0SHV - 3 m

  0,2mOhm, BF-2, measuring range 0..-1500/+3600 A,
  resolution 1,25 mA/bit*, permanent current ca. 180 A**
  IMFIP-R2602-0SHV - 3 m

  0,1mOhm, BF-2, measuring range 0..-3000/+7200 A,
  resolution 2,5 mA/bit*, permanent current ca. 400 A**
  IMFIP-U2602-0SHV - 3 m

* indicated for the lowest measuring range

**depending on the type of connection !

ACCESSORIES

- **HV-U voltage-PROBEs,** isolation 1 kV

  Range ± 1000 V,
  resolution 1,25mV/bit*
  IMFVP-00007-0SHV - 1 m
  IMFVP-00009-0SHV - 3 m

  Range ± 200 V,
  resolution 170µV/bit*
  IMFVP-00007-NSHV - 1 m
  IMFVP-00009-NSHV - 3 m

* indicated for the lowest measuring range
See separate catalogue excerpts or data sheets**.**

- **Individual measuring adapters**
  - Measurement-adapters with original automobile plug connectors. They are placed directly into the measuring circuit.
  - Application of battery-interruptor for current measurement via “Service Plug“.

For further types see data sheet “KLARI-PROBES$_{1000V}$“

We are pleased to quote individual solutions.