KLARI-ONE PLUS 1000V

with: I-PROBE, U-PROBE, I/U-PROBE, thermocouple type-K

Features
- 2-channel measuring module with 2 ASICs, 1 microcontroller and 1 PROBE-connector
- galvanical isolation of 1000 V DC between data output and PROBES
- **no** isolation between measurement points
- **PROBE variants:**
  - parallel measurement of current and voltage using a COMBI-PROBE (I/U-PROBE)
  - single channel measurement with a current-, voltage- or thermocouple-PROBE (I- or U- or thermocouple-PROBE)
- **Configuration of measurement channels:**
  - DC- and AC-measurement, internal sample rate up to 16 kHz
  - data output via 1 or 2 x CAN 2.0 A/B, resp. 8000 frames/s or 2 x 8000 frames/s as single sample or mean values
  - for AC applications calculation of true RMS values for each period and transfer via CAN interface
  - in addition the frequency/period is transferred
  - based on these results following calculations could be done:
    $S = U\_rms * I\_rms$
    $P = U\_rms * I\_rms * cos(Phi)$
    optional : $W = P * time$

Version
- potted housing: 108/58/36 mm (L/W/H)
- protection class IP65
- temperature range -40...+85 °C
- supply 6..50 V DC

A detailed technical description is contained in our user manual.

Delivery
- measurement module (please order PROBES separately)
- PC Software for configuration via CAN or USB-2.0 interface
- CAN Database and documentation on CD ROM

Accessories
- cable harness IP65 without RS-232
- USB 2.0 connection cable
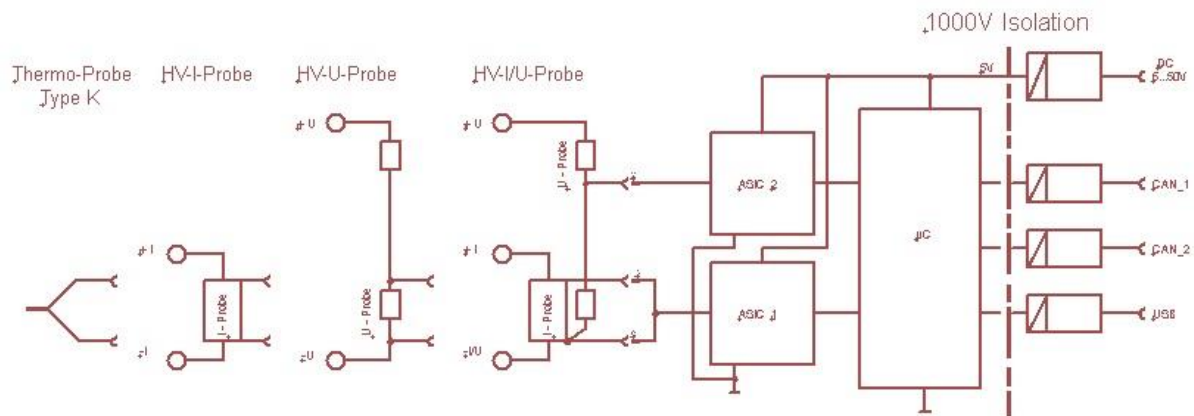
TECHNICAL DATA

Input	• 2 measuring channels with an ASIC each • parallel measurement of current and voltage using a COMBI-PROBE (I/U-PROBE) • single channel measurement with current, voltage or thermocouple PROBE (I-, U- or thermocouple type K - PROBE)
Resolution	• 5 measurement ranges with selectable autorange function • ± 15 bit/range
Accuracy	• ± 1% of measurement value ± 3 bit of range • valid for temperature range of - 40 .. + 85°C
Sample rate	• single channel operation: max. 16.000 samples/s • dual channel operation: max. 2 x 16.000 samples/s
Features	• selectable data output (CAN2.0B and/or USB-2.0 interface) • data output via CAN 1 and CAN 2 configurable (baudrate, identifier etc.) • internal CAN-termination, switchable via software • automatic PROBE-identification with calibration value processing
Output	• 2 x CAN 2.0 A/B, (High-Speed CAN, ISO 11898) from 125 kbit/s up to max. 1 Mbit/s • USB-2.0 interface
Timestamp	• 6.4 µs resolution (is included in CAN frame)

Housing
  - Protection
  - Weight
  - Dimension
	• potted housing
	• IP65
	• 350 g
	• 108/58/36 (L/W/H)

Supply	• 6,0…50 V DC
Current consumption	• ca. 200 mA at 12 V DC
Configuration	• via PC using CAN or USB-2.0 interface. Configurations could be created, archived and loaded into the module. • speed CAN: 125 kB…1 MB • measurement type, measuring speed, channels
Modes	• Autorange function for all channels across all measuring ranges • Selectable sample speed for each channel • RMS calculation for AC signals
Temperature range	• - 40…+ 85°C for the measurement module • - 40…+ 130°C for the shunt
Isolation	• 1000 V DC permanent isolation Input <> Output. **(the measurement inputs itself are not isolated.)**

Resolution detail table:

Gain	Range	Resolution
100	+/- 7,5 mV	0,250 µV/bit
50	+/- 15 mV	0,500 µV/bit
24	+/- 30 mV	1 µV/bit
6	+/- 120 mV	4 µV/bit
1	+ 720 / - 300 mV	24 µV/bit

KLARIC
Individual Solutions for Measuring and Testing

Measurement ranges and resoluations for I- and U-PROBES (examples)

Gain	I-PROBE				U-PROBE			
	1 mΩ		200µΩ		200 V		1000 V	
	Range [A]	Res. [mA/bit]	Range [A]	Res. [mA/bit]	Range [V DC]	Res. [mV/bit]	Range [V DC]	Res. [mV/bit]
100	+/- 7,5	0,25	+/- 37,5	1,25	0...+/- 5	0,170	0...+/- 37,5	1,25
50	+/- 15	0,5	+/- 75	2,5	0...+/- 10	0,340	0...+/- 75	2,5
24	+/- 30	1	+/- 150	5	0...+/- 20	0,680	0...+/- 150	5
6	+/- 120	4	+/- 600	20	0...+/- 80	2,720	0...+/- 600	20
1	- 300/+ 720	24	- 1500/+3600	120	0...+/- 200	16,320	0...+/- 1000	120

Principle

Application