



Features

- 2-channel measuring module with 2 parallel ASICs and 1 shared microcontroller
- both channels can be used flexibly for current, voltage or temperature measurements with one PROBE each
- with separate measuring signal connectors (DIN-plug) a maximum of 2 voltages and 1 temperature can be measured successively
- easy use of measurement technology for various applications
- galvanical isolation of 80 V DC between data outputs and CAN- and RS-232-interfaces and supply

• PROBE- variants:

- current measurement I-PROBE (LI-, MICRO2-, FK1-...FK3-, J-CASE, HI-PROBES)
- voltage measurement U-PROBE
- temperature measurement T-PROBE

A detailed technical description is contained in our data sheet „KLARI-PROBES“.

• Fields of application:

- use in laboratory and automotive: measuring of currents, voltages or temperatures at single appliances
- data output via 1 x CAN 2.0 A/B, also 8000 frames/s and/or RS-232

Version

- aluminium housing 115/60/35 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 RS-232-interface
- CAN database and documentation on CD ROM

Accessories

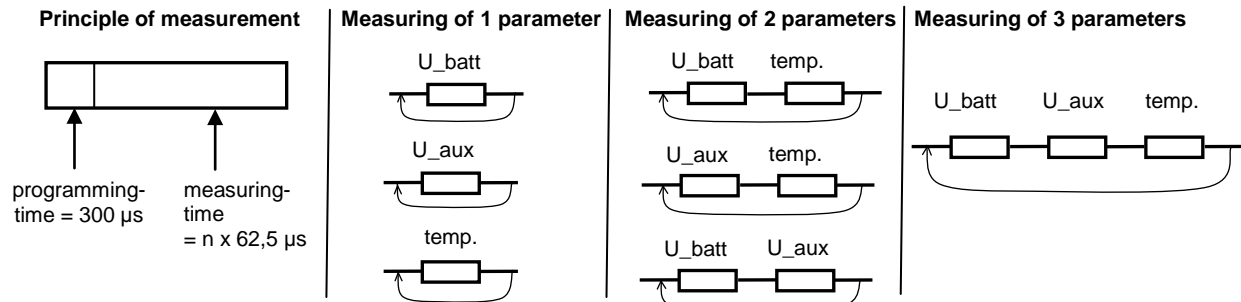
- cable harness IP65 with RS-232

TECHNICAL DATA

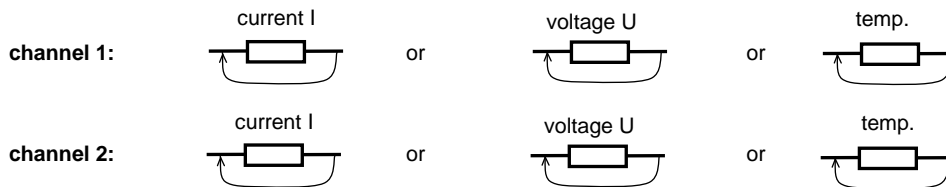
Input	<ul style="list-style-type: none"> • 2 measuring channels with one ASIC each for current, voltage or temperature measurements • 3 measuring signal inputs for voltage - and/or temperature measurements All MS3-inputs have one common reference point • Measurement options see page 3 																		
Resolution	<ul style="list-style-type: none"> • 5 measurement ranges with selectable autorange function • ± 15 bit/range <table border="1"> <thead> <tr> <th>Gain</th> <th>Range</th> <th>Resolution</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>+/- 7,5 mV</td> <td>0,250 μV/bit</td> </tr> <tr> <td>50</td> <td>+/- 15 mV</td> <td>0,500 μV/bit</td> </tr> <tr> <td>24</td> <td>+/- 30 mV</td> <td>1 μV/bit</td> </tr> <tr> <td>6</td> <td>+/- 120</td> <td>4 μV/bit</td> </tr> <tr> <td>1</td> <td>+ 720 / - 300 mV</td> <td>24 μV/bit</td> </tr> </tbody> </table>	Gain	Range	Resolution	100	+/- 7,5 mV	0,250 μ V/bit	50	+/- 15 mV	0,500 μ V/bit	24	+/- 30 mV	1 μ V/bit	6	+/- 120	4 μ V/bit	1	+ 720 / - 300 mV	24 μ V/bit
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Accuracy	<ul style="list-style-type: none"> • $\pm 1\%$ of measurement value ± 3 bit of the range • valid for temperature range of - 40...+ 85 °C 																		
Sample rate	<ul style="list-style-type: none"> • 1-channel operation max. 8.000 samples/s • 2-channel operation 2 x 4.000 samples/s 																		
Features	<ul style="list-style-type: none"> • selectable data output channel (CAN2.0B and/or RS-232) • data output via CAN or RS-232 configurable (Baudrate, Identifier etc.) • internal CAN-termination selectable , switchable via software • automatic PROBE-identification with calibration value processing 																		
Output	<ul style="list-style-type: none"> • parameter driven CAN data output • potential-free high-speed-CAN with 1 MBaud • RS232 with 115 kBaud interface 																		
Timestamp	<ul style="list-style-type: none"> • 30 μs resolution (is included in CAN frame) 																		
Housing	<ul style="list-style-type: none"> • aluminium housing <table> <tr> <td>- Protection</td> <td>• IP65</td> </tr> <tr> <td>- Weight</td> <td>• ca. 260 g</td> </tr> <tr> <td>- Dimension</td> <td>• 115x60x35 (l/w/h)</td> </tr> </table>	- Protection	• IP65	- Weight	• ca. 260 g	- Dimension	• 115x60x35 (l/w/h)												
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Supply	• 6,0...50 V DC																		
Current consumption	• ca. 150 mA at 12 V DC																		
Configuration	<ul style="list-style-type: none"> • via PC using CAN or RS-232 interface. Configurations could be created, archived and loaded into the module. • speed CAN: 125 kB...1 MB • measurement type, measuring speed, channels 																		
Modes	<ul style="list-style-type: none"> • multichannel-mode with: <ul style="list-style-type: none"> - autorange function for all channels across all measuring ranges - selectable sample speed for each channel - selectable averaging for all channels to reduce data volume 																		
Temperature range	<ul style="list-style-type: none"> • - 40...+ 85°C for the measurement module • - 40...+ 130°C for the shunts 																		
Isolation	• 80 V DC																		

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Measurement options using DIN-plug: MS 3



Measurement options using Lemo-plug: channel 1, channel 2



Attention: A combined operation of channel 2 and MS 3-connector is **not** allowed.

Measuring ranges and resolutions for I- and U-PROBES (examples)

Gain	I-PROBE				U-PROBE	
	1 mΩ		200µΩ		80 V	
	Range [A]	Resolution [mA/Bit]	Range [A]	Resolution [mA/Bit]	Range [V DC]	Resolution [mV/Bit]
100	+/- 7,5	0,25	+/- 37,5	1,25	0...+/- 5	0,170
50	+/- 15	0,5	+/- 75	2,5	0...+/- 10	0,340
24	+/- 30	1	+/- 150	5	0...+/- 20	0,680
6	+/- 120	4	+/- 600	20	0...+/- 80	2,720
1	- 300/+ 720	24	- 1.500/+3.600	120		

Principle

