



Manufacturer: Stefan Klaric GmbH & Co.KG

KLARI-PROBES



KLARI-MOD MC 2



KLARI-FUSE 2



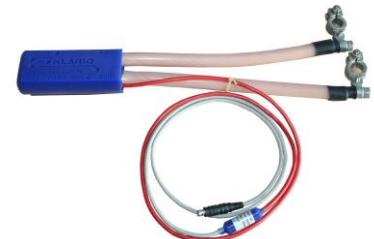
KLARI-CORD 3



FK-plug-in fuse



BF-Shunt



Special-PROBE

- Features**
- **KLARI-PROBES** are the matching measuring adapters for low-voltage modules up to 80 V of Co.Klaric.
 - For current measurements the PROBES are equipped with low resistive accuracy resistors, for voltage measurements with voltage dividers. Temperature measurements are executed with PT1000 resistance thermometers which are also available in acid resistant version.
 - All **KLARI-PROBES** have a memory device with communication cable to the module. Therefore the configuration data (type, adjustment values, serial number etc.) are read out of the PROBE and transmitted to the module.
 - The adjustment values are considered for the measurement result calculation. This implicates a very high degree of accuracy.
 - Because the shunts only have marginal temperature drift, temperature compensation is not needed.
 - **On request we offer a factory or a DaKKs calibration.**

- Versions**
- **LI-PROBES:** These PROBES are used to measure currents in range of 0,25 μ A...150 A (peak current). The user has to take care of protecting the measuring circuit.
 - **FK-PROBES:** Current measurements in defined electric circuits in vehicle fuse boxes can be performed with adapters like MICRO2, FK1, FK2, FK3 and J-CASE-plug-in-fuses. The measuring circuit is protected in the ranges of 5...70 A by the original fuse.
 - **HI-PROBES:** Depending on the selected PROBE current measurements may be performed in ranges of 2,5 mA...+7.200/-3.000 A (peak current when using a 100 μ Ω -Shunt). The user has to take care of protecting the measuring circuit.
 - **U-PROBES:** With these PROBES voltage measurements are available in ranges of 170 μ V...+/- 80 V.
 - **T-PROBES:** With these PROBES temperature measurements are available in range of -40...+105 $^{\circ}$ C.

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KLARI-PROBES

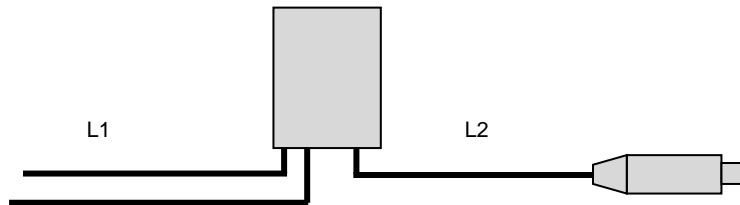
LI - PROBES

Measuring adapter with cable lead-out for looping the PROBE into the measuring circuit. The protection of the measuring circuit has to be provided by the user. The shunt is integrated in a grouted casing.

PROBE construction:

- cable lead-out = L1 (1 m), (heat resistant and highly flexible) with loose cable ends
- grouted casing with integrated shunt and memory device used for PROBE-identification and calibration data (standard)
- data cable = L2 (1...5 m) with 6-pin push-pull connector

Caution: The maximum continuous current is lower than the measuring range.
Please refer to the user manual.



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LI - PROBES

Resistor [mOhm]	Measuring range [A]	Resolution/Bit* [µA]	Maximum permanent current ** [A]
1000	-0,3...+0,72	0,25	0,72
500	-0,6...+1,44	0,5	1,44
100	-3...+7,2	2,5	6,5
50	-6...+14,4	5	9,5
25	-12...+28,8	10	12
10	-30...+72	25	21
5	-60...+144	50	25
2	-150...+360	125	40

* indicated for the lowest measuring range
** at room temperature (23°C)

size (l/w/h): 50x40x16 mm

Ordering:
 <name> - <resistance value> - <L1> - <L2> - <L3>
 LI - 1000 / ... / 2 - 1 - 1...5 - 0





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KLARI-PROBES

FK - PROBES

(measuring circuit protected by the original fuse)

Measuring adapters with MICRO2, FK1, FK2, FK3 and J-CASE connectors, which are plugged into the vehicle's fuse holder instead of the original fuse. The original fuse has to be plugged into the PROBE's fuse holder to ensure that the measuring circuit is protected. Fuse holder and shunt are integrated in a small aluminum casing.

PROBE construction:

- MICRO2, FK1-, FK2-, FK3- and J-CASE - PROBES
- cable with fuse = L1 (high flexible and heat resistant)
- aluminium casing with integrated shunt and fuse holder for measuring circuit protection
- data cable = L2 (1...5 m) with 6-pin push-pull-connector.
- memory device, used for PROBE-identification and calibration data.

Caution: The maximum continuous current may be lower than the measuring range.
Please refer to the user manual.



FK1- and MICRO-2 - FUSE

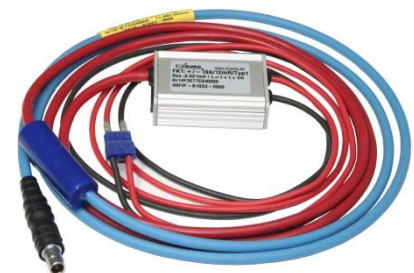
Type	Measuring range [A]	Resolution/Bit* [µA]	R _{Nenn} [mΩ]	Ø [mm]
5 A	5	10	25	1,5
10 A	10	25	10	2,5

size (l/w/h): 58x41x16 mm

20 A	20	50	5	4
30 A	30	125	2	4

size (l/w/h): 58x41x16 mm

* indicated for the lowest measuring range



Ordering:
 <name> - <fuse value> - <L1> - <L2> - <L3>
 FK1 / - 5 / ... / 30 - 1/2/3 - 1...5 - 0
 MICRO2

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KLARI-PROBES

FK2 - FUSE

Type	Measuring range [A]	Resolution/Bit* [µA]	R _{Nenn} [mΩ]	Ø [mm]
5 A	5	10	25	1,5
10 A	10	25	10	2,5
20 A	20	50	5	4

size (l/w/h): 58x41x20 mm

Type	Measuring range [A]	Resolution/Bit* [µA]	R _{Nenn} [mΩ]	Ø [mm]
30 A	30	125	2	4
40 A	40	250	1	4

size (l/w/h): 115x55x25 mm

* indicated for the lowest measuring range

Ordering: <name> - <fuse value> - <L1> - <L2> - <L3>
 FK2 - 5 / ... / 40 - s.table - 1...5 - 0



FK3 - FUSE

Type	Measuring range [A]	Resolution/Bit* [µA]	R _{Nenn} [mΩ]	L1 [m]	Ø [mm]
30 A	30	125	2	1/2/3	4
50 A	50	250	1	1	6
70 A	70	500	0,5	0,5	6

size (l/w/h): 115x55x25 mm

* indicated for the lowest measuring range

Ordering: <name> - <fuse value> - <L1> - <L2> - <L3>
 FK3 - 30 / 50 / 70 - s.table - 1...5 - 0



J-CASE - FUSE

Type	Measuring range [A]	Resolution/Bit* [µA]	R _{Nenn} [mΩ]	L1 [m]	Ø [mm]
J-CASE	20	50	5	1/2/3	2x2,5 / 4
J-CASE	30	125	2	1/2/3	2x2,5 / 4
J-CASE	40	250	1	1/2/3	2x2,5 / 4
J-CASE	50	250	1	1	6
J-CASE	60	500	0,5	0,5	6

size (l/w/h): 110x71x25 mm

* indicated for the lowest measuring range

Ordering: <name> - <fuse value>- <L1> - <L2> - <L3>
 J-CASE - 20 / ... / 60 - s.table - 1...5 - 0



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KLARI-PROBES

HI – PROBES (without measuring circuit protection)

At these PROBES the shunt has to be placed directly into the measuring circuit.
 The protection of the measuring circuit has to be provided by the user.
 PROBE construction:

- Shunt (type BF1 or BF2) with mounting straps (temperature range -40...+130°C)
- memory device, used for PROBE identification and calibration data
- data cable = L2 (1...5 m) with 6-pin push-pull connector.

Caution: The maximum continuous current is lower than the measuring range.
 Please refer to the user manual.

HIGH-CURRENT - PROBES

BF 1

Resistor [mΩ]	Measuring range [A]	Resolution/Bit* [mA]	Maximum permanent current** [A]
2	-150...360	0,125	60
1	-300...+720	0,25	80
0,5	-600...+1440	0,5	120
0,2	-1500...+3600	1,25	150

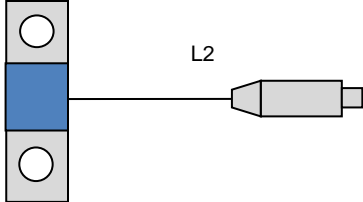
size (l/w/h): 42x16x15 mm
 the shunts are linked with a copper bar 20x3x200 mm
 * indicated for the lowest measuring range
 ** at room temperature (23°C)

BF 2

Resistor [mΩ]	Measuring range [A]	Resolution/Bit* [mA]	Maximum permanent current** [A]
2	-150...360	0,125	80
1	-300...+720	0,25	120
0,5	-600...+1440	0,5	130
0,2	-1500...+3600	1,25	180
0,1	-3000...+7200	2,5	310

size (l/w/h): 68x27x15 mm
 the shunts are linked with a copper bar 20x3,5x200 mm
 * indicated for the lowest measuring range
 ** at room temperature (23°C)

Ordering:
 <name> - <resistance value> - <L1> - <L2> - <L3>
 HI-BF1 - 2 / ... / 0,2 - 0 - 1...5 - 0
 HI-BF2 - 2 / ... / 0,1 - 0 - 1...5 - 0



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KLARI-PROBES

HI

HI-SPECIAL-PROBES

Resistor [mΩ]	Measuring range [A]	Resolution/Bit* [mA]	Maximum permanent current shunt** [A]
0,2	-1500...3600	1,25	150
0,1	-3000...+7200	2,5	250
0,05	-6000...+8000	5	300
0,025	-8000...+8000	10	400

size: (l/w/h): 150x65x40mm (without cables)

* indicated for the lowest measuring range

** at room temperature (23°C)

the maximum permanent current is limited by the cross-section of the connected cables L1

Ø L1 = 35 mm² / 70 mm² selectable

200 A / 305 A allowed max. permanent current at 80°C

- for installation in a drug battery-box instead of the stud between the batteries
- Standard connection cable shoe, other connections after consultation with us

Ordering:

<name> - <resistance value> - <L1> - <L2> - <L3>
HI-SPECIAL - 0,2 / ... / 0,025 - 0,7 - 1...5 - 0

BF3 - SHUNT

Resistor [mΩ]	Measuring range [A]	Resolution/Bit* [mA]	Maximum permanent current** [A]
0,05	-6000...+8000	5	300
0,025	-8000...+8000	10	420

size: (l/w/h): 90x42x15mm

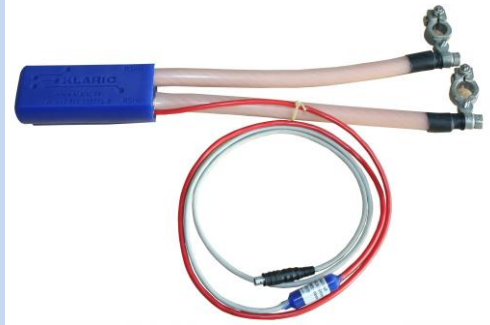
the shunts are linked with a copper bar 20x3x200mm

* indicated for the lowest measuring range

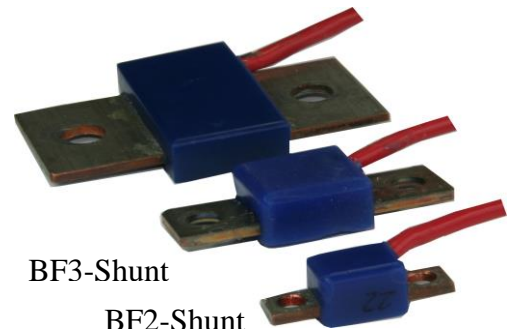
** at room temperature (23°C)

Ordering:

<name> - <resistance value> - <L1> - <L2> - <L3>
HI-BF3 - 0,05 / 0,025 - 0 - 1...5 - 0



grouted HI-PROBE



BF3-Shunt

BF2-Shunt

BF1-Shunt

Various resistors and PROBE types available. We would be pleased to help you finding the appropriate PROBE for your measuring task.

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KLARI-PROBES

ACCESSORIES

T - PROBE (acid-resistant)

PT1000 sensor for temperature measurements
 temperature measuring range: -40 to +105 °C
 data cable = L2 (1...5 m)
 PT1000 sensor cable = L1 (2 m)

Ordering: <name> - <L1> - <L2> - <L3>
 T-80V - 2 - 1...5 - 0

U - PROBE

voltage measuring adapter
 measuring range +/-80 V
 resolution: 170 µV/Bit
 data cable: 1 m
 measuring cable: See below / depends on variant
 total length: data cable + measuring cable

Gain	Measuring range [V]	Resolution/Bit* [µV]
100	+/- 5	170
50	+/- 10	340
24	+/- 20	680
6	+/- 80	2720

* indicated for the lowest measuring range

Ordering: <name> - <L1> - <L2> - <L3>
 U-80V - 1...5 - 1 - 0

Extension cable for the PROBES

Ordering: <name> - <L1> - <L2> - <L3>
 PROBE-EXT-80V- 0 - 2 / 4 - 0



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