Innovative connection of a 3-phase current transformer set to a multifunctional power meter

“Quick Connect“

– quick – easy – efficient –

safe and reliable

Your benefits of “Quick Connect“

- Drastically reduced labour time (and therefore costs) due to the quick and easy wiring
- Avoiding faulty connections due to simple “Plug ’n‘ Play“ technology
- Higher safety and less down time due to integrated protective circuits, which enable to connect the current transformer live
- Large range of primary currents from 60 to 1250 A with only three different transformer designs
- Two multifunctional power meters to choose from (72 x 72 mm & 96 x 96 mm)

“Quick Connect“ – the modular power measuring system

How it works:

1. Choose a current transformer (three designs, primary current from 60 A to 1250 A)
2. Select a power meter (MPR 3 in size 72 x 72 mm or MPR 4 in size 96 x 96 mm)
3. Determine the necessary length of the wire (0.3 m – max. 5.0 m; standard: 1 m)
4. Send all details to AMS – done!

Never before you selected the components for a multifunctional power measuring system that quickly.

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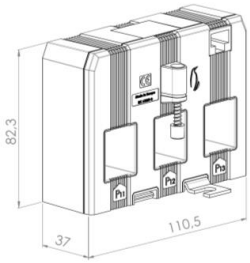
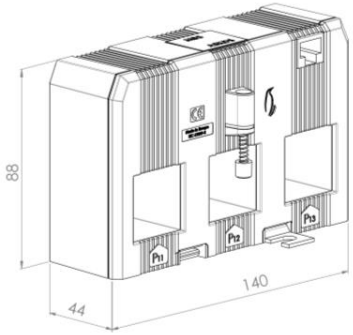
3-phase Current Transformer Set “ASKDS“

with innovative connection technology “Quick Connect“

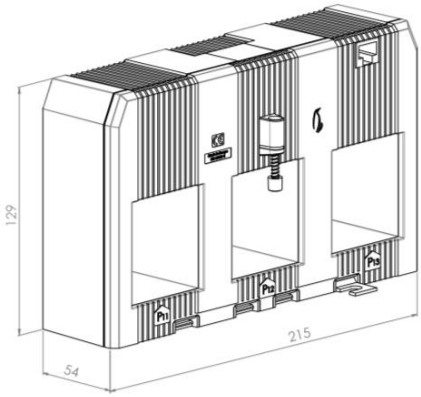
ASKDS 25



ASKDS 33



ASKDS 55



Quick – Easy – Efficient

- Much faster installation than with three conventional current transformers
- Easier wiring using an 8-pin RJ45-connector instead of 6 individual wires for conventional current transformers
- Allows efficient setup of multifunctional power measurement in conjunction with our meter MPR 3 (72 x 72 mm) or MPR 4 (96 x 96 mm)

Description

- Current transformer set designed for use with our multifunctional meters type MPR 3 (72 x 72 mm) and MPR 4 (96 x 96 mm)
- Transmission of the measured values to the meter by means of a modified RJ45 interface via standard CAT5 patch cable (available in different lengths up to 5 m)
- All transformers can be operated open due to an integrated protective circuit
- 3-phase current transformer sets designed for a near switch installation in the range of a large number of standard circuit breakers

Specifications

- Operating temperature: -5°C < T < +50°C
- Storage temperature: -25°C < T < +70°C
- Therm. nominal continuous current I_{cth}: 1.0 x I_N
- Therm. nominal short-time current I_{th}: 60 x I_N, 1 sec
- Operating voltage U_m: 1.2 kV max
- Insulation test voltage: 6 kV, U_{eff}, 50 Hz, 1 min
- Output signal limit in case of overload: ≤ 2 x U_{AN}
- Nominal rated frequency: 50 Hz
- Insulation class: B
- Technical standards used: IEC 61869, part 8

Main dimensions

Type / Dim.	ASKDS 25	ASKDS 33	ASKDS 55
Bus bar window (w x h)	21 x 25 mm	30.5 x 29.5 mm	50.2 x 54 mm
Distance between bus bar centers	35 mm	45 mm	70 mm
Width	110.5 mm	140 mm	215 mm
Hight	82.3 mm	88 mm	129 mm
Total depth	56 mm	63 mm	73 mm

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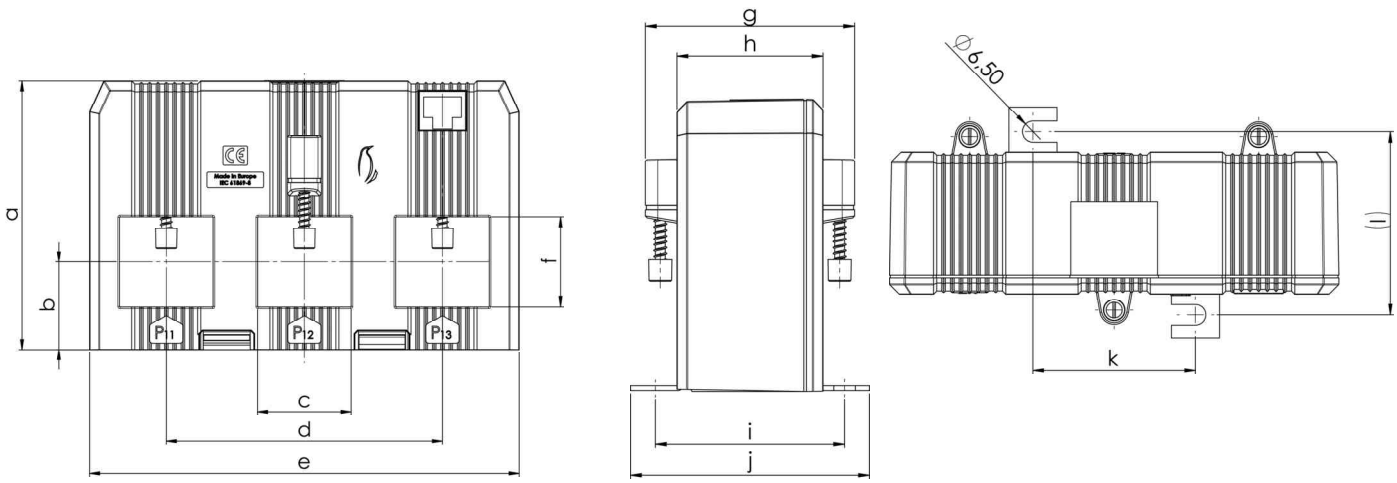
Dimensions



Dim / Type	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	g [mm]	h [mm]	i [mm]	j [mm]	k [mm]	l [mm]
ASKDS 25	82.3	28.5	21	70	110.5	25	56	37	57	72	35	57
ASKDS 33	88	28.75	30.5	90	140	29.5	63	44	57	72	50.6	57
ASKDS 55	129	46	50.2	140	215	54	73	54	64	79	112.5	64

Available primary values [A]:

ASKDS 25: 60, 75, 100, 150, 200, 250
ASKDS 33: 250, 300, 400, 500, 600
ASKDS 55: 750, 800, 1000, 1200, 1250

All types have:
Output signal: 0…330 mV AC
Accuracy class: 1

Accessories:

- Snap-on fixing for installing the current transformer on a DIN-rail
- QuickFix for swift mounting on a primary conductor
- Connection wire

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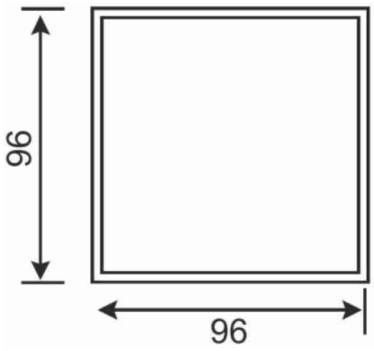
Multifunctional Power Meter “MPR 4“

with innovative connection technology “Quick Connect“

Description

- Easy connection of the 3-phase current transformer set ASKDS with the 330 mV voltage input for equivalent primary currents from 60 A up to 1250 A
- Also connectable to split core current transformers type KBR 18/32/44 with 0…333 mV output
- Replacement of a large number of analogue meters and thus considerably lower wiring costs
- Storage of minimum and maximum values enables monitoring and fault analysis
- Included Modbus-RTU (RS485) interface allows integration into an energy management system
- Optionally available with separate output module (2x digital input, 2x digital output, 2x analogue output, 2x switching output)



Usage

Energy is becoming more and more expensive and therefore a steadily rising cost block. In order to detect energy wasters, the multifunctional meters MPR 3 (72 x 72 mm) and MPR 4 (96 x 96 mm) in conjunction with the current transformer set ASKDS are specially designed for the monitoring of equally or unequally loaded 3- or 4-phase networks in building technology. All relevant data can thus be measured and displayed.

Measured Values

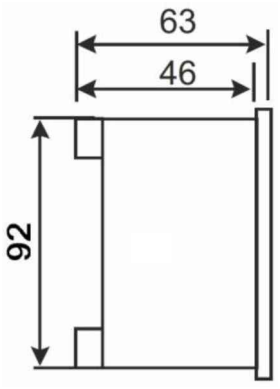
With the multifunctional power meter MPR 4 the following measured values can be recorded:

- Instantaneous values of current, voltage, frequency and power factor
- Active power, apparent power and reactive power per phase as well as for the entire network
- Minimum and maximum values of current, voltage, active and reactive power, power factor per phase and for the entire network
- Optionally the distortion factor of current and voltage can be displayed

Additionally a 4-quadrant energy meter for each active and reactive power, two operating-hours counter as well as a phase sequence indicator are integrated. One of the operating-hours counters can be reset manually.

The user-friendly operation of the device is intuitive via five buttons and the menu guide in the display.

All mentioned outputs are galvanically separated from den measuring inputs and the auxiliary voltage.



Technical Characteristics

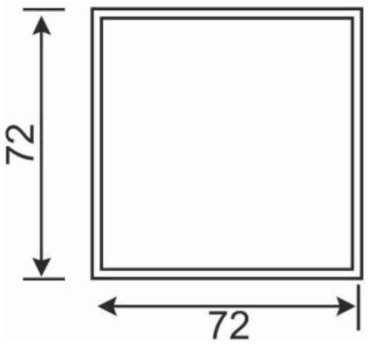
Input	
Input voltage:	5 - 277 V AC phase-ground (5 - 480 V AC phase-phase) (2.5mm²)
Input current (U ~ I):	0 – 330 (500) mV via current transformer ASKDS using CAT5 RJ45 cable (optionally via split core current transformers type KBR 18/32/44 directly connected to the terminals
Network frequency:	50 - 60 Hz
Auxiliary voltage supply:	50 - 270 V AC/DC ± 10 % (2.5 mm²)
Power consumption:	≤ 5 VA
Housing	
Dimensions (W x H x D) / panel cut out:	96 x 96 x 46 mm / 92 $^{+0.8 / -0.0}$ x 92 $^{+0.8 / -0.0}$ mm
Weight:	Approx. 340 g
Mounting:	For panels up to 8 mm thick
Connections:	Voltage: screw terminals Current: 8-pin RJ45 plug + screw terminals
Front side:	5 control buttons
Display:	FSTN LCD graphic display with background lighting
Display dimensions:	3.5"
Ambient conditions	
Operating temperature range:	- 5 °C … + 55 °C
Storage temperature range:	- 20 °C … + 70 °C
Relative Humidity:	Up to 90%, not condensing
Elevation:	Up to 2000 m
Contamination level:	2, according to EN 61010-1:2011
Operating conditions	
Safety:	According to EN 61010-1:2011; CAT III 300 V
Protection class according to EN 60529:	IP54 front-side, IP20 terminals
Maximum voltage to earth:	≤ 277 V
EMC	
Interference emissions:	According to EN 55011 class A; EN 55022 class B
Immunity to interference:	According to EN 61000-4-2, EN 61000-4-3, EN 61000-4-4
Accuracy	
Current, voltage:	0.5 %
Active, reactive and apparent power; active energy	1.0 %
Reactive energy:	2.0 %
cos φ:	0.2 %
Frequency:	0.1 %
Modbus-RTU (RS485) interface	
Baud rate:	2400, 4800, 9600, 19200, 38400, 57600, 115200
Address range / parity:	1 – 247 / even, odd, none
Maximum cable length:	1200 m (by using a repeater)
Optional output module	
Available outputs:	2x digital out, 2x digital in, 2x analogue out, 2x switching out
Memory	
Internal memory:	16 MB
Password protection	
Parameter setting:	Password protected

Multifunctional Power Meter “MPR 3“

with innovative connection technology “Quick Connect“

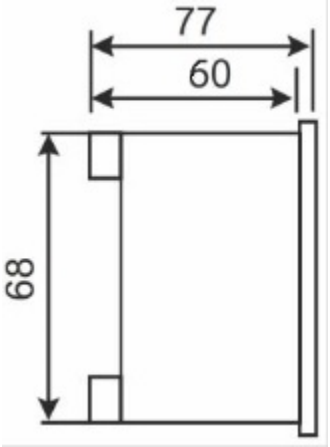
Description

- Easy connection of the 3-phase current transformer set ASKDS with the 330 mV voltage input for equivalent primary currents from 60 A up to 1250 A
- Via adapter also connectable to split core current transformers type KBR 18/32/44 with 0…333 mV output
- Replacement of a large number of analogue meters and thus considerably lower wiring costs
- Storage of minimum and maximum values enables monitoring and fault analysis
- Digital input and output as well as an S0 pulse output allow integration in an energy management system
- Additional interface: Modbus-RTU (RS485)



Usage

Energy is becoming more and more expensive and therefore a steadily rising cost block. In order to detect energy wasters, the multifunctional meters MPR 3 (72 x 72 mm) and MPR 4 (96 x 96 mm) in conjunction with the current transformer set ASKDS are specially designed for the monitoring of equally or unequally loaded 3- or 4-phase networks in building technology. All relevant data can thus be measured and displayed.



Measured values

With the multifunctional power meter MPR 3 the following measured values can be recorded:

- Instantaneous values of current, voltage, frequency and power factor
- Active power, apparent power and reactive power per phase as well as for the entire network
- Minimum and maximum values of current, voltage, active and reactive power, power factor per phase as well as for the entire network
- Optionally the distortion factor of current and voltage can be displayed

Additionally integrated are one 4-quadrant energy meter for each active and reactive power, two operating-hours counters as well as one phase sequence indicator.
One of the operating-hours counters can be reset manually.

The user-friendly operation of the device is intuitive via four buttons and the menu guide in the display.

All mentioned outputs are galvanically separated from the measuring inputs and the auxiliary voltage.

Technical Characteristics

Input	
Input voltage:	10 – 400 V AC phase-ground (10 – 690 V AC phase-phase) (2.5 mm²)
Input current (U ~ I):	0 – 330 (500) mV via current transformer ASKDS using CAT5 RJ45 cable (optionally via split core current transformers type KBR 18/32/44 with RJ45 adapter
Network frequency:	45-65 Hz
Auxiliary voltage supply:	185 - 265 V AC/DC ± 10 % (2.5 mm²)
Power consumption:	< 5 VA
Housing	
Dimensions (W x H x D) / panel cut out:	72 x 72 x 50 mm / 68 $^{+0.7 / -0.0}$ x 68 $^{+0.7 / -0.0}$ mm
Weight:	Approx. 230 g
Mounting:	Snap-in fixing for panels up to 8 mm thick
Connections:	Voltage: screw terminals Current: 8-pin RJ45 plug
Front side:	4 control buttons
Display:	FSTN LCD graphic display with background lighting
Display dimensions:	2.6"
Ambient conditions	
Operating temperature range:	- 10 °C … + 55 °C
Storage temperature range:	- 20 °C … + 70 °C
Relative Humidity:	Up to 90%, not condensing
Elevation:	Up to 2000 m
Contamination level:	2, according to EN 61010-1:2011
Operating conditions	
Safety:	According to EN 61010-1:2011; CAT III 300 V
Protection class according to EN 60529:	IP51 front-side, IP20 terminals
Maximum voltage to earth:	≤ 400 V
EMC	
Interference emissions:	According to EN 55011 class A; EN 55022 class B
Immunity to interference:	According to EN 61000-4-2, EN 61000-4-3, EN 61000-4-4
Accuracy	
Current, voltage, active power:	0.5 %
Reactive power, apparent power, active energy:	1.0 %
Reactive energy:	2.0 %
cos φ:	0.2 %
Frequency:	0.1 %
Available output modules	
Pulse output:	1 pulse output possible
Pulse duration:	20, 40, 60, 80, 100, 150, 200, 300, 400, 500 ms
Switching current (pulse output):	50 mA max.
External voltage (pulse output):	5 … 48 V
RS485 Modbus-RTU:	1 Modbus module possible (max. ±12 V, 1.5 mm²)
Baud rate (Modbus):	2400, 4800, 9600, 19200, 38400, 57600, 115200
Address range / parity (Modbus):	1 – 247 / even, odd, none
Maximum cable length (Modbus):	1200 m (using a repeater)
Digital outputs:	1 input + 1 output (5 – 30 V DC, 1.5 mm²)
Memory	
Internal memory:	1 MB
Password protection	
Parameter setting:	Password protected

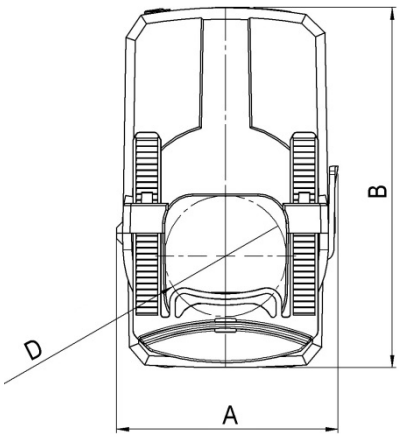
Split core current transformer (KBR)

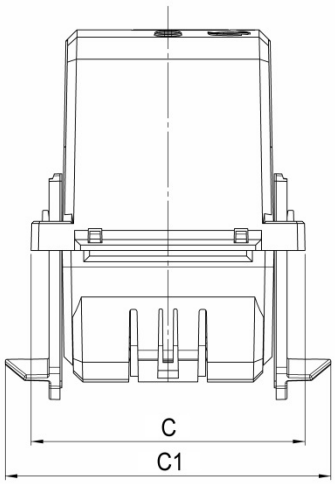
Merkmale / Nutzen

- Ideal for subsequent installation into existing systems
- The special “click” system enables a quick “one-handed” installation
- Available as current sensor (0…333 mV)
- Quick and easy connection of three KBRs to the digital meter MPR 3 by using an adapter plug
- “Quick Connect“ compatible
- Three different designs

Technical details

- Length of connection lead: 0…333 mV: 2.5 m, cross-section 2 x 0.75 mm²
- Working temperature range: -5°C < T < +50°C
- Storage temperature range: -25°C < T < +70°C
- Therm. nominal continuous current I_{cth}: 1.2 x I_N
- Therm. nominal short-time current I_{th}: 60 x I_N, 1 sec
- Maximum operating voltage U_m: 0.72 kV
- Insulation test voltage: 3 kV, U_{eff}, 50 Hz, 1 Min.
- Nominal rated frequency: 50 Hz
- Insulation class: E
- Technical standards used: IEC 61869-1/ 2





Dimensions

Type	A (width) [mm]	B (height) [mm]	C / C1 (depth) [mm]	D (diameter) [mm]
KBR 18	41.6	64.5	55 / 67.3	18.5
KBR 32	59.2	96.4	75 / 89.2	32.5
KBR 44	72.2	120.6	85 / 98.1	44

Available primary currents

Type	KBR 18	KBR 32	KBR44
accuracy class	1	1	1
primary current [A]			
50	X		
75	X		
100	X	X	
125	X	X	
150	X	X	
200	X	X	
250	X	X	X
300		X	X
400		X	X
500		X	X
600		X	X
750			X
800			X
1000			X

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