

Pictograms of the table heads

U_n Rated voltage (V)	I_n Rated current (A)	P_{max} Max. power	P_s Starting power
Solid, strained, fine wire	mm ² Terminal capacity	Dimensions (L × W × H)	Weight
Meter with electromechanical display	Meter with LCD display	Display (number of digits)	Power supply
Turns ratio	Shunt	Type of battery, sender	Type of battery, receiver
Width of rail (CT)	Cable diameter (CT)	Direct meter	Meter with current transformer
Impulse output	Impulse width	Starting current	Base current (max. current)
Capacitor groups	Temperature measuring	Dimensions of frame	Measuring range
Accuracy class	Number of current transformers	Cutting size (mm)	

Pictograms of the technical data

Vibration resistance	Rated thermal current	Security factor	Auxiliary contacts
Certified current transformer	Relativ humidity	Impulse voltage withstand	Protection degree (installed, from the front side)
Rated dynamic current	Display of elapsed hour counter	Changeable scale	Self consumption
Rated insulation voltage	Continuous overload	Optical signal	Impulse output
Cam switch	Momentary overload	Linear scale	Not changeable scale
Continuous overload	AC voltage measuring	Low battery display	Polarity display
Momentary overload	Diode test	Battery test	Logarithmic scale
AC current measuring	Rated voltage (V)	Measuring of amplification factor of transistor	Seal-leadable
DC voltage measuring	Ambient temperature	Can be install on mounting rail	DC current measuring
Resistance measuring	Connectable cable	Storage temperature	Temperature measuring
Operation temperature	Protection of terminals (with protection cap)	Material: ABS	Flammability according to UL94
Protection degree			



AC voltage meters 2



Direct DC current meters 3



Indirect AC current meters with changeable dial plate 4



Indirect DC current meters with changeable dial plate 5



Power meters 6



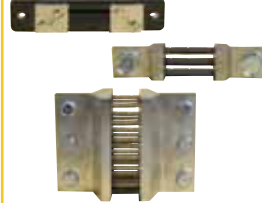
Frequency meters 7



Power factor (cos φ) meters 7



Operating time counters 8



TSF shunt product family 9



Analogue voltage meters 10



Analogue ampere-meters for indirect measurement, AC 11



Analogue frequency meters 12



Power factor meters 12



Digital measuring instruments 12



Analogue power meters 13



Direct digital ammeter 14



Digital power factor meter 16



Digital multimeter 17



Power analyzer 19



Energy meters 20



Plug-in digital energy meter 23



Phase correctors 24



Low voltage current transformers 28



Calibrated current transformer 30



Digital multimeter 32



Digital clamp meter for EM420A device 33



Digital clamp meter 34



Metal searching device 35



Infrared thermometer 35



Pocket digital multimeter with search light 35



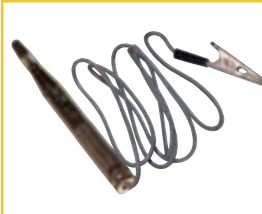
Voltage tester 36



Induction controlling instrument 36



Voltage tester screwdriver 37

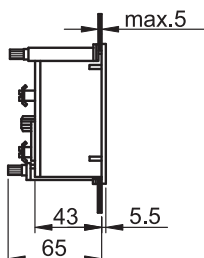
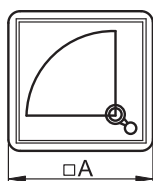
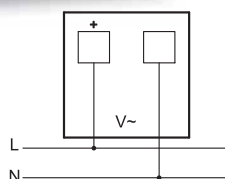
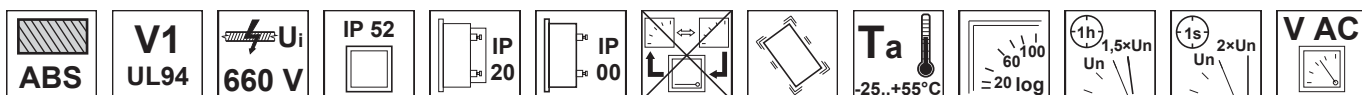


Motor vehicle testing lamp 37



Multifunction control device 37

AC voltage meters

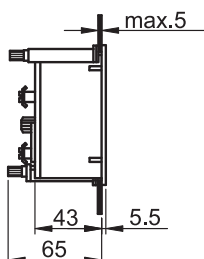
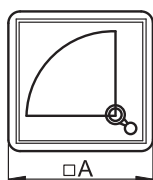
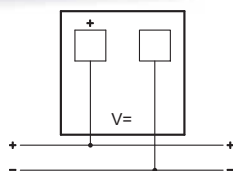
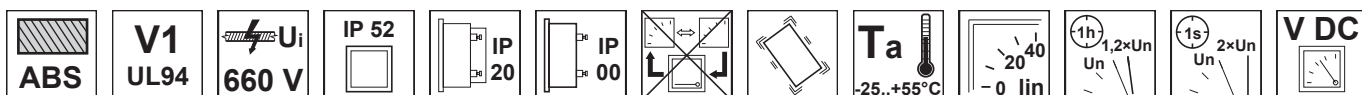


TRACON				
ACVM96-30	96 × 96 mm	0-30 V	1,5 %	90 mm
ACVM96-120	96 × 96 mm	0-120 V	1,5 %	90 mm
ACVM96-250	96 × 96 mm	0-250 V	1,5 %	90 mm
ACVM96-450	96 × 96 mm	0-500 V	1,5 %	90 mm
ACVM96-600	96 × 96 mm	0-600 V	1,5 %	90 mm
ACVM72-30	72 × 72 mm	0-30 V	1,5 %	66 mm
ACVM72-120	72 × 72 mm	0-120 V	1,5 %	66 mm
ACVM72-250	72 × 72 mm	0-250 V	1,5 %	66 mm
ACVM72-450	72 × 72 mm	0-500 V	1,5 %	66 mm
ACVM72-600	72 × 72 mm	0-600 V	1,5 %	66 mm
ACVM48-30	48 × 48 mm	0-30 V	1,5 %	42 mm
ACVM48-120	48 × 48 mm	0-120 V	1,5 %	42 mm
ACVM48-250	48 × 48 mm	0-250 V	1,5 %	42 mm
ACVM48-450	48 × 48 mm	0-500 V	1,5 %	42 mm
ACVM48-600	48 × 48 mm	0-600 V	1,5 %	42 mm

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DC voltage meters



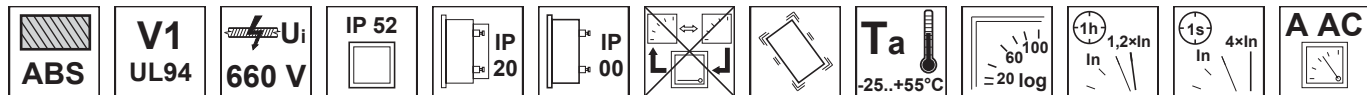
TRACON				
DCVM96-30	96 × 96 mm	0-30 V	1,5 %	90 mm
DCVM96-120	96 × 96 mm	0-120 V	1,5 %	90 mm
DCVM96-250	96 × 96 mm	0-250 V	1,5 %	90 mm
DCVM96-400	96 × 96 mm	0-400 V	1,5 %	90 mm
DCVM96-600	96 × 96 mm	0-600 V	1,5 %	90 mm
DCVM72-30	72 × 72 mm	0-30 V	1,5 %	66 mm
DCVM72-120	72 × 72 mm	0-120 V	1,5 %	66 mm
DCVM72-250	72 × 72 mm	0-250 V	1,5 %	66 mm
DCVM72-400	72 × 72 mm	0-400 V	1,5 %	66 mm
DCVM72-600	72 × 72 mm	0-600 V	1,5 %	66 mm
DCVM48-30	48 × 48 mm	0-30 V	1,5 %	42 mm
DCVM48-120	48 × 48 mm	0-120 V	1,5 %	42 mm
DCVM48-250	48 × 48 mm	0-250 V	1,5 %	42 mm
DCVM48-400	48 × 48 mm	0-400 V	1,5 %	42 mm
DCVM48-600	48 × 48 mm	0-600 V	1,5 %	42 mm

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Direct AC current meters

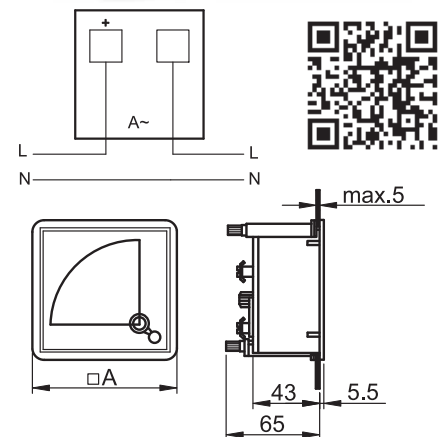


TRACON				
ACAM96-5	96 × 96 mm	0-5 A	1,5 %	90 mm
ACAM96-10	96 × 96 mm	0-10 A	1,5 %	90 mm
ACAM96-30	96 × 96 mm	0-30 A	1,5 %	90 mm
ACAM96-50	96 × 96 mm	0-50 A	1,5 %	90 mm
ACAM96-75	96 × 96 mm	0-75 A	1,5 %	90 mm
ACAM96-105	96 × 96 mm	0-100 A	1,5 %	90 mm
ACAM72-5	72 × 72 mm	0-5 A	1,5 %	66 mm
ACAM72-10	72 × 72 mm	0-10 A	1,5 %	66 mm
ACAM72-30	72 × 72 mm	0-30 A	1,5 %	66 mm
ACAM72-50	72 × 72 mm	0-50 A	1,5 %	66 mm
ACAM72-75	72 × 72 mm	0-75 A	1,5 %	66 mm
ACAM48-5	48 × 48 mm	0-5 A	1,5 %	42 mm

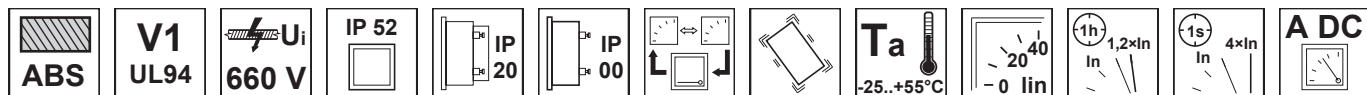
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These meters are eligible to measure the TRMS of the alternate current in 0-100 A current range without any other accessories. The measuring unit is of iron vane type. On the logarithmic scale the maximal elongation means twice as much as the metering range.



Direct DC current meters



DC milliamperemeters

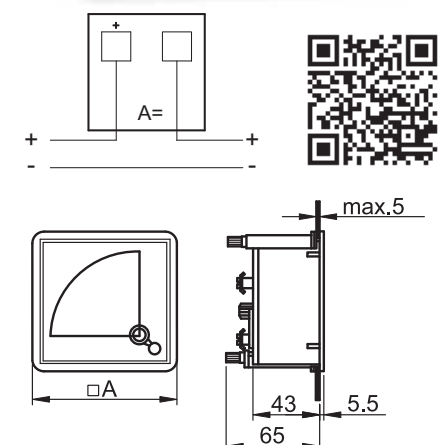
TRACON				
DCAM96-0,02	96 × 96 mm	0-20 mA	1,5 %	90 mm
DCAM72-0,02	72 × 72 mm	0-20 mA	1,5 %	66 mm
DCAM48-0,02	48 × 48 mm	0-20 mA	1,5 %	42 mm

DC ampere meters

TRACON				
DCAM96-5	96 × 96 mm	0-5 A	1,5 %	90 mm
DCAM96-20	96 × 96 mm	0-20 A	1,5 %	90 mm
DCAM72-5	72 × 72 mm	0-5 A	1,5 %	66 mm
DCAM72-20	72 × 72 mm	0-20 A	1,5 %	66 mm
DCAM48-5	48 × 48 mm	0-5 A	1,5 %	42 mm
DCAM48-20	48 × 48 mm	0-20 A	1,5 %	42 mm

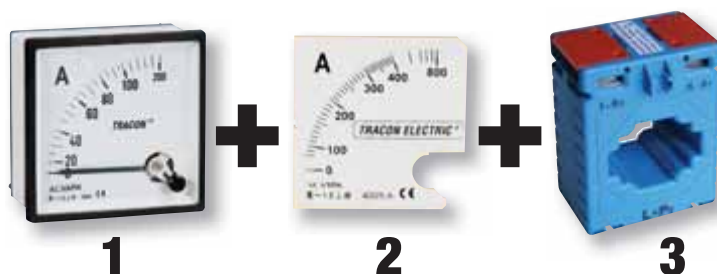
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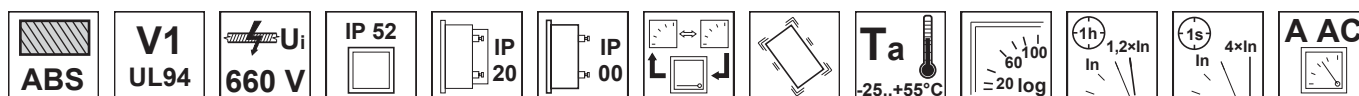


Direct AC current meters with changeable dial plate

These meters are eligible to measure directly the current values of high current electric circuits. Suitable current transformers (CT) are used for extension of the measuring range. The basic instrument will be connected to the 5 A secondary coil of the CT. Changeable dial plates with 0 ... X metering range can be ordered according to the table below.



(1) Basic AC instruments



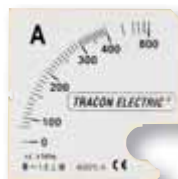
TRACON				
ACAM96-5	96 × 96 mm	0-5 A	1,5 %	90 mm
ACAM72-5	72 × 72 mm	0-5 A	1,5 %	66 mm
ACAM48-5	48 × 48 mm	0-5 A	1,5 %	42 mm

CT

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(2) Dial plates for ACAM... current meters



TRACON		
SCALE-AC96-X/5A	96 × 96 mm	0-X (A)
SCALE-AC72-X/5A	72 × 72 mm	0-X (A)
SCALE-AC48-X/5A	48 × 48 mm	0-X (A)

Please remark the X value at ordering according to the wanted measuring range!

(3) Harmonization table for current transformers and dial plates for indirect current metering



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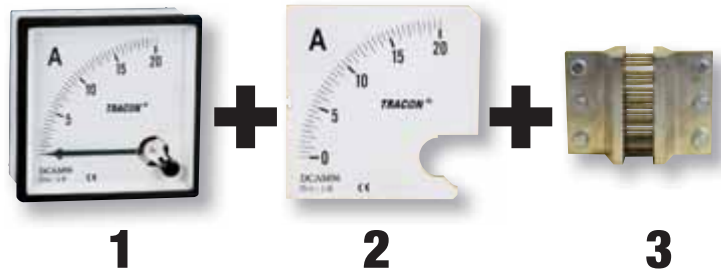
0-X	0-X	0-X	0-X	0-X	0-X	0-X	0-X
30/5	0-30 A	120/5	0-120 A	400/5	0-400 A	1500/5	0-1500 A
40/5	0-40 A	125/5	0-125 A	500/5	0-500 A	2000/5	0-2000 A
50/5	0-50 A	150/5	0-150 A	600/5	0-600 A	2500/5	0-2500 A
60/5	0-60 A	200/5	0-200 A	750/5	0-750 A	3000/5	0-3000 A
75/5	0-75 A	250/5	0-250 A	800/5	0-800 A	4000/5	0-4000 A
80/5	0-80 A	300/5	0-300 A	1000/5	0-1000 A	5000/5	0-5000 A
100/5	0-100 A						

Please remark the X value at ordering according to the wanted measuring range!

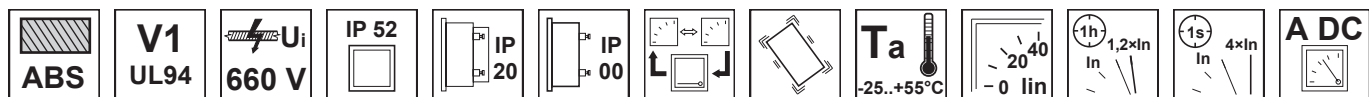
Direct DC current meters with changeable dial plate



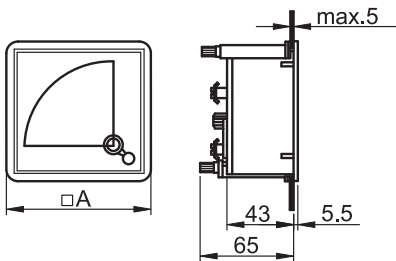
These meters are eligible to measure directly the current values of high current electric circuits. The extension of the metering range happens with shunt; the basic meter with 0 ... 75 mV voltage range has to be connected to the measuring contact of the shunt. For basic DC current meter a changeable dial plate can be ordered with 0-X metering range, according to the following table.



(1) DC basic meters

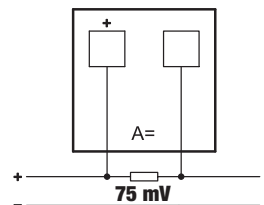


TRACON				
DCVM-96B	96 × 96 mm	0-75 mV	1,5 %	90 mm
DCVM-72B	72 × 72 mm	0-75 mV	1,5 %	66 mm
DCVM-48B	48 × 48 mm	0-75 mV	1,5 %	42 mm



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(2) Dial plates for DC current metering

TRACON		
SCALE-DC96-X/75mV	96 × 96 mm	0-X (A)
SCALE-DC72-X/75mV	72 × 72 mm	0-X (A)
SCALE-DC48-X/75mV	48 × 48 mm	0-X (A)

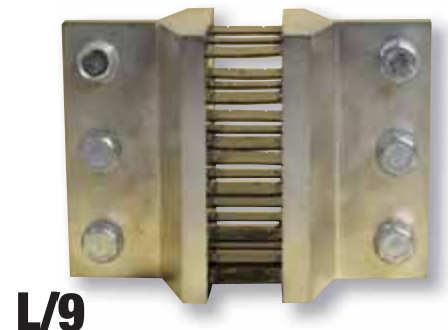
Please remark the X value at ordering according to the wanted measuring range!



(3) Harmonization table for shunts and dial plates for indirect current metering

75mV	0-X	75mV	0-X	75mV	0-X	75mV	0-X
TSF-30	0-30 A	TSF-100	0-100 A	TSF-400	0-400 A	TSF-1000	0-1000 A
TSF-40	0-40 A	TSF-150	0-150 A	TSF-500	0-500 A	TSF-1500	0-1500 A
TSF-50	0-50 A	TSF-200	0-200 A	TSF-600	0-600 A	TSF-2000	0-2000 A
TSF-75	0-75 A	TSF-300	0-300 A	TSF-750	0-750 A	TSF-3000	0-3000 A

Please quote the X value when ordering according to the wanted measuring range!



Power meters

These power meters measure the active power of single or three phases loads. The metering range of the devices is determined according to the primary current (X) of the applied CT-s with 5 A secondary current. In panel meters of 96×96 mm frame size, the basic instrument and the plastic casing (box) of the measuring electronics are placed in the same unit, whereas with the meters of 72×72 mm frame size, the measuring electronics and the basic instrument are delivered separately and should be placed and wired separately in the control box as well. Dial plates can be done according to the table below.



(1) Power meters

	V1 UL94	 660 V				 -25...+55°C	 0-40 -0 lin	 1,2×In	 1,2×Un	 4×In	 2×Un	
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TRACON			Un	In	 0-10 ha %				L1, L2, L3, N
W96-400V/4	96 × 96 mm	0-100	400 V~	X/5 A	1,5 %	90 mm	× 3		L1, L2, L3, N
W72-400V/4	72 × 72 mm	0-100	400 V~	X/5 A	1,5 %	66 mm	× 3		L1, L2, L3, N

(2) Dial plates for power meters

	TRACON	
	L1, L2, L3, N	
SCALE-W96/4-P	96 × 96 mm	0-P (kW)
SCALE-W72/4-P	72 × 72 mm	0-P (kW)

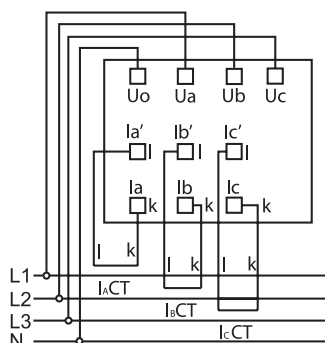
Please always index the X and P data while ordering!

(3) Harmonization table for current transformers and dial plates for single or three phase power metering

3~	3~	3~	3~	3~	3~
30/5	24 kW	125/5	100 kW	750/5	600 kW
40/5	32 kW	150/5	120 kW	800/5	640 kW
50/5	40 kW	200/5	160 kW	1000/5	800 kW
60/5	48 kW	250/5	200 kW	1500/5	1200 kW
75/5	60 kW	300/5	240 kW	2000/5	1600 kW
80/5	64 kW	400/5	320 kW	2500/5	2000 kW
100/5	80 kW	500/5	400 kW	4000/5	3200 kW
120/5	96 kW	600/5	480 kW	5000/5	4000 kW



L/28

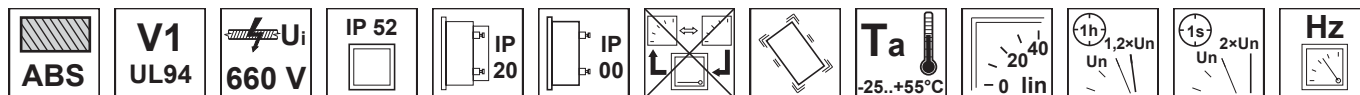


Legend

CT = current transformer
k, l = secondary terminals of CT

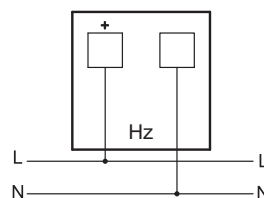
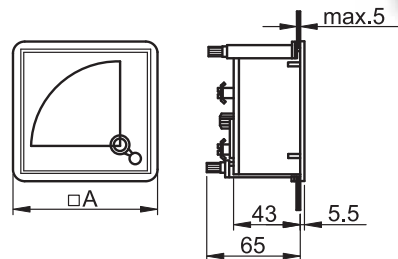


Frequency meters



TRACON				
F96-220/50	96 × 96 mm	45-55 (230 V)	1,5 %	90 mm
F72-220/50	72 × 72 mm	45-55 (230 V)	1,5 %	66 mm
F48-220/50	48 × 48 mm	45-65 (230 V)	2,5 %	42 mm

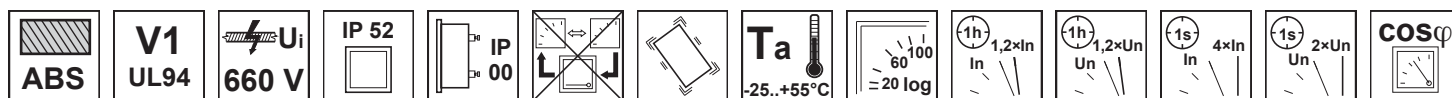
Used to measure the frequency of low voltage networks, in the 45 ... 55 Hz range. Voltage has to be connected to the terminals of the device; the instrument displays the value of the frequency by help of a transformer enclosed within the unit.



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Power factor (cos φ) meters



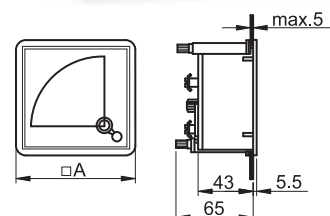
TRACON			U_n	I_n		
CF96-0,5/1	96 × 96 mm	0,5 cap-1-0,5 ind	240 V~	X/5 A	1,5 %	90 mm
CF72-0,5/1	72 × 72 mm	0,5 cap-1-0,5 ind	240 V~	X/5 A	1,5 %	66 mm
CF96-0,5/3	96 × 96 mm	0,5 cap-1-0,5 ind	400 V~	X/5 A	2,5 %	90 mm
CF72-0,5/3	72 × 72 mm	0,5 cap-1-0,5 ind	400 V~	X/5 A	2,5 %	66 mm

These devices are measuring the power factor of single or three phases system in 0,5 capacitive – 0,5 inductive range. If the current is higher than 5 A, a secondary current transformer of 5 A shall be used. According to capacitive or inductive load of the system the pointer moves to the left (capacitive) or to the right (inductive) side on the symmetrical scale. The metering changer is installed in the housing.

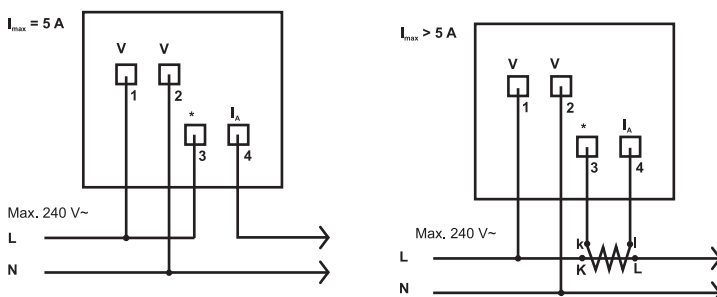


Art of load

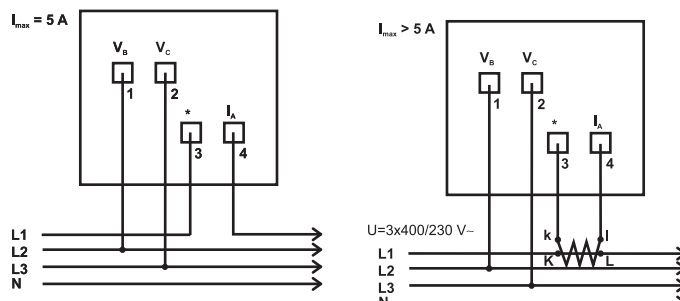
Lead = capacitive,
Lag = inductive



Wiring diagram for one phase system



Wiring diagram for three phases system

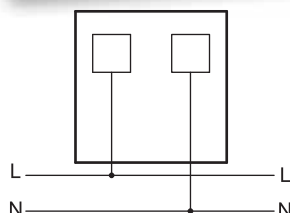


Operating time counters



Pictograms

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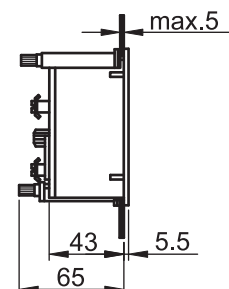
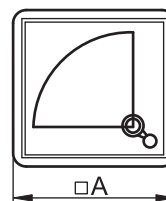
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TRACON



ISZ72-24	72 × 72 mm	66 mm
ISZ72-230	72 × 72 mm	66 mm
ISZ96-24	96 × 96 mm	90 mm
ISZ96-230	96 × 96 mm	90 mm

Displayed counting values cannot be reset!



TRACON APPLICATION

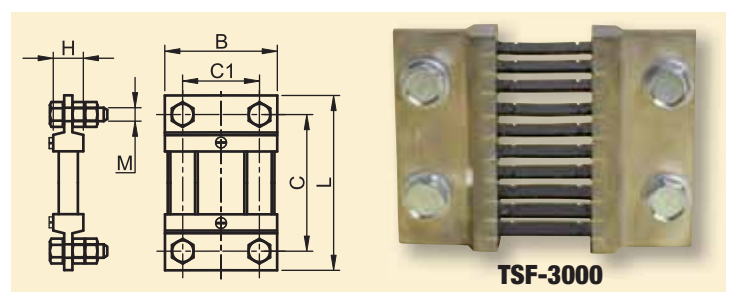
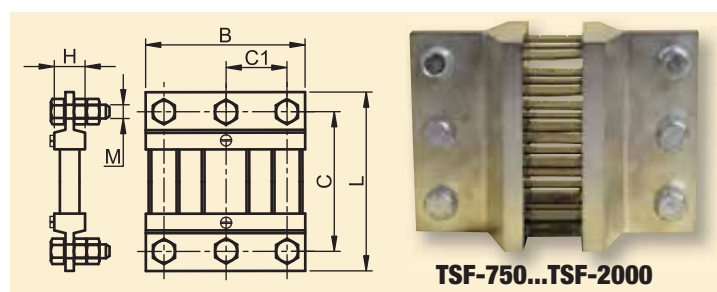
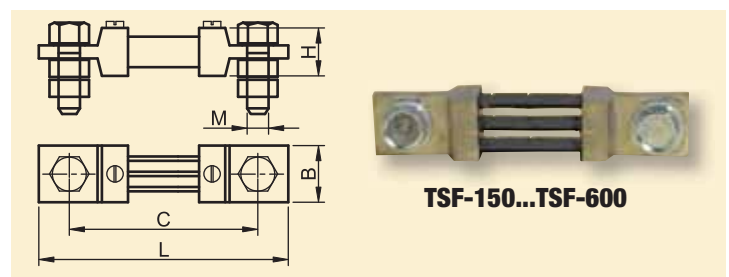
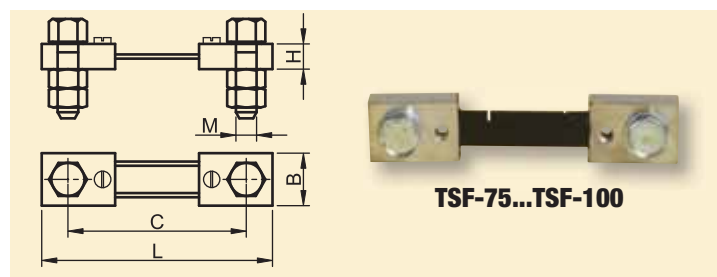
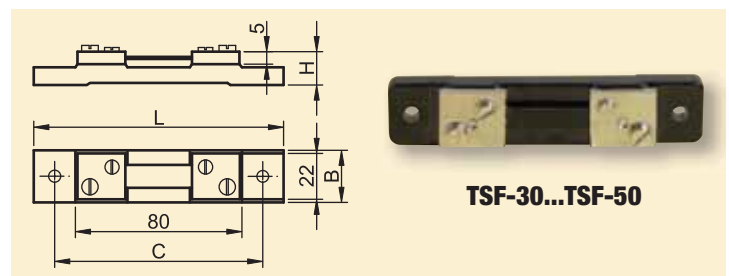
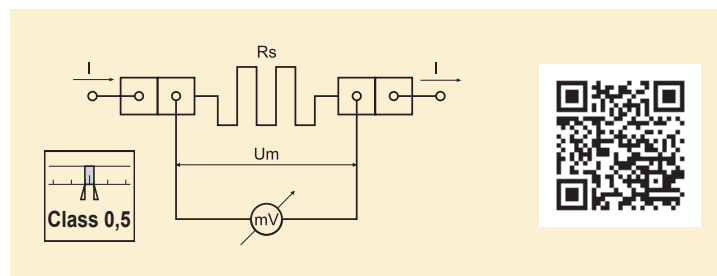


Shunts

TRACON		L (mm)	C (mm)	B (mm)	H (mm)	M (mm)
TSF-30	30A/75mV	120	102	25	15	-
TSF-40	40A/75mV	120	102	25	15	-
TSF-50	50A/75mV	120	102	25	15	-
TSF-75	75A/75mV	110	86	23	10	M8 × 35
TSF-100	100A/75mV	106	86	23	10	M8 × 35
TSF-150	150A/75mV	116	86	21	22	M8 × 35
TSF-200	200A/75mV	116	86	21	22	M8 × 35
TSF-300	300A/75mV	127	100	26	22	M10 × 35

The voltage drop between the two connectors of the shunt - induced by the current, flowing through the shunt - is proportional to the resistance of the shunt. Therefore, the intensity of the current flowing through the circuit can be determined in function of the voltage measured between the end-points of the shunt with known resistance value. The diagram illustrates the process of voltage drop (U_m) in the shunt (R_s), measured with the instrument (mV). The current intensity value can be read directly on the dial scale in Ampere units.

The voltage drop between the measuring points of the available direct current shunts (TSF) is limited to max. 75 mV. Therefore, the measurement values of the attached basic instruments are also limited to 75 mV.



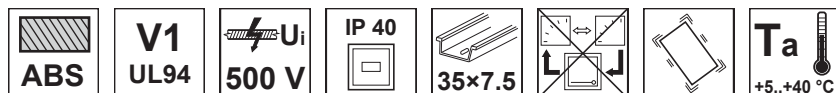

TRACON
.....**ELECTRIC**

Key to electricity

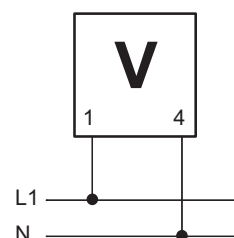
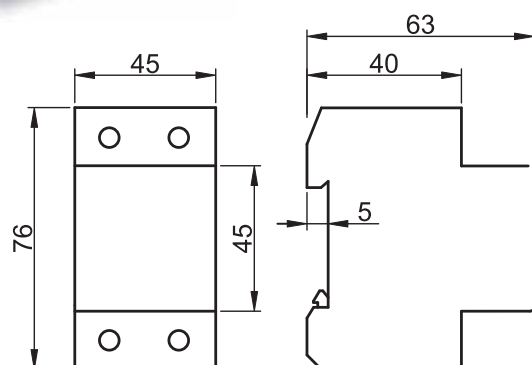
Tracon Key to electricity



Analogue voltage meters



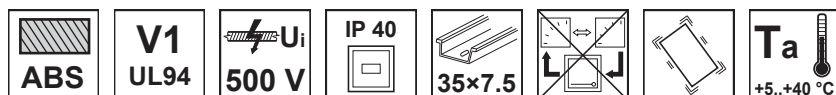
TRACON			
ACVMS-25		0-25 V	1,5 %
ACVMS-100		0-100 V	1,5 %
ACVMS-250		0-250 V	1,5 %
ACVMS-450		0-450 V	1,5 %
DCVMS-25		0-25 V	1,5 %
DCVMS-100		0-100 V	1,5 %
DCVMS-250		0-250 V	1,5 %



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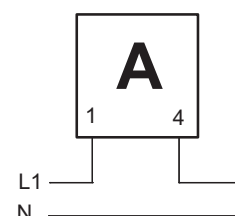
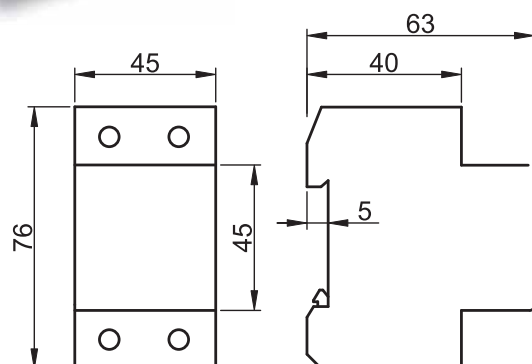
RELEVANT STANDARD
EN 61010

Analogue ampere-meters for direct measurement



TRACON			
ACAMS-5		0-5 A	1,5 %
ACAMS-10		0-10 A	1,5 %
DCAMS-20m*		0-20 mA	1,5 %
DCAMS-10		0-10 A	1,5 %

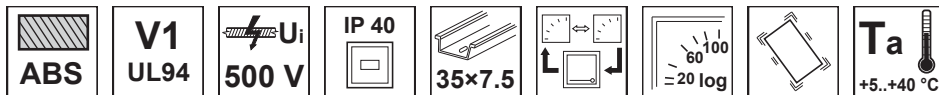
* The miliampere meters for direct current can be used as measuring current values of electronic actuating and control circuits. For instrument individual scales also available after negotiation. This way the meter will be applicable to measure physical values after transforming it to electric value (e.g. temperature, rev).



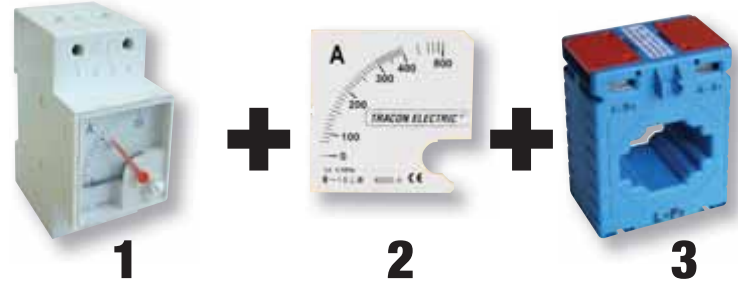
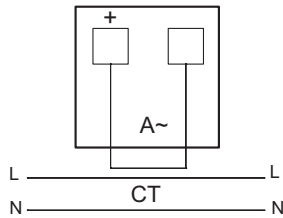
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Analogue ampere-meters for indirect measurement, AC



The ACAMS-X/5 type basic instrument can be used in the 5 A secondary circuit of current transformers. Upon suitable choice of the display scale, the instrument can be connected to the secondary circuit of current transformers with any primary current value.



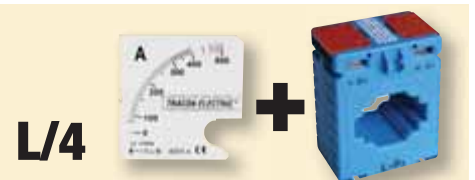
(1) Basic AC instruments

TRACON		
ACAMS-X/5	0-X A	1,5 %

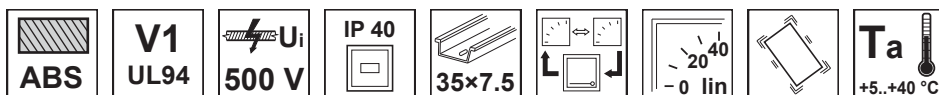
(2) Dial plates for ACAM... current meters

TRACON	
SCALE-45 AC-X*	0-X (A)
* Please remark the X value at ordering according to the wanted measuring range!	

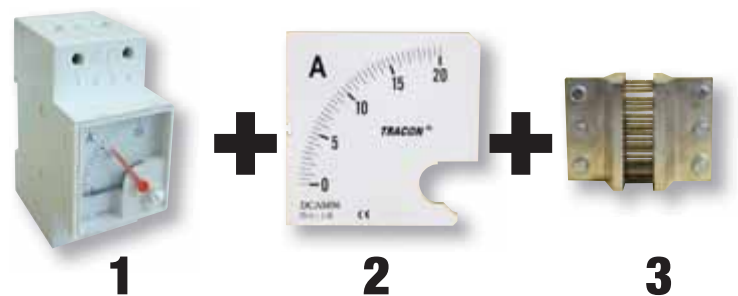
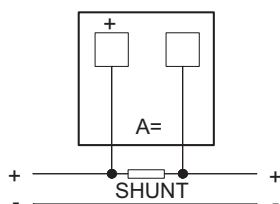
(3) Harmonization table for current transformers and dial plates for indirect current metering



Analogue ampere-meters for indirect measurement, DC



Basic instruments of DCVMS-X/75 type connected to TSF type shunts with 75 mV measurement voltage can be used for measurement of continuous current (DC).



(1) DC basic meters

TRACON		
DCVMS-X/75	0-X A	1,5 %

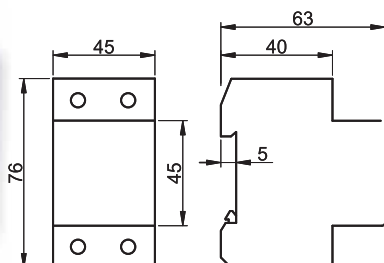
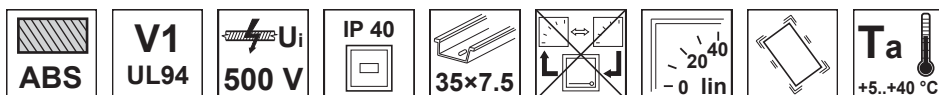
(2) Dial plates for DC current metering

TRACON	
SCALE-45 DC-X*	0-X (A)
* Please remark the X value at ordering according to the wanted measuring range!	

(3) Harmonization table for shunts and dial plates for indirect current metering



Analogue frequency meters



TRACON

F45S-230/50



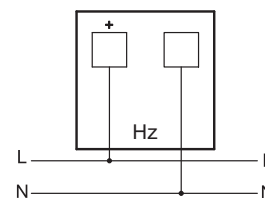
45-55Hz



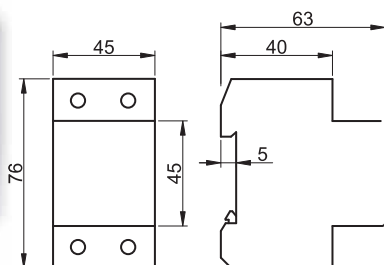
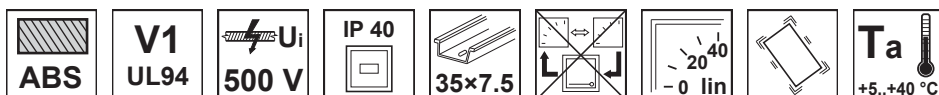
1,0 %

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Power factor meters



TRACON

CF45S-0,5/1

CF45S-0,5/3



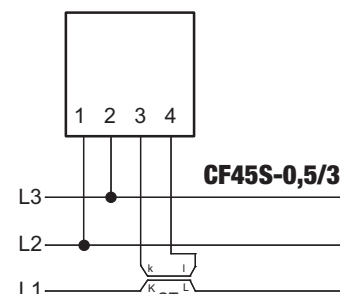
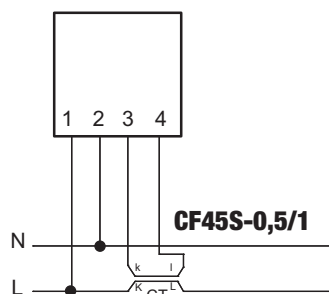
5A/230V 1f ±0,5



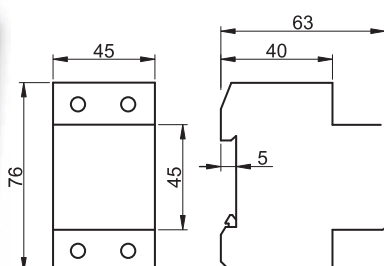
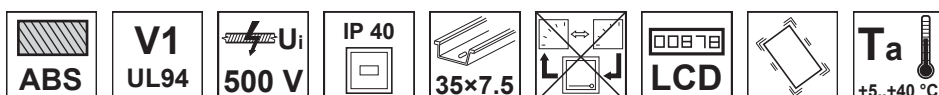
2,5 %

5A/400V 3f ±0,5

2,5 %



Digital measuring instruments



TRACON

ACAMSD-10

ACVMDS-500



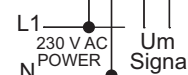
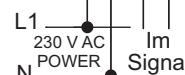
0-10 A



×3



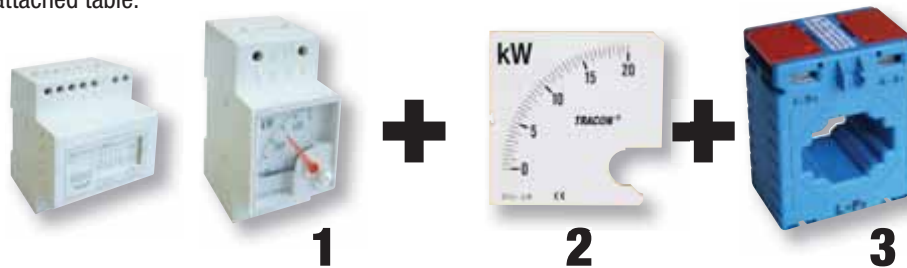
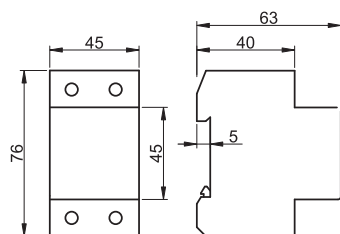
1,5 %



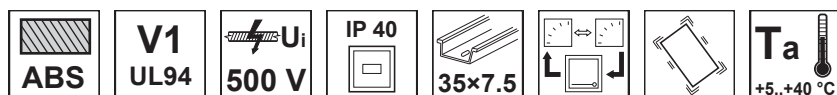
Modular analogue power meters

These devices are metering the effective power of one or three phase systems. The metering range is determined by the primary voltage (X) of current transformers with 5 A secondary current. The actuating electronic is delivered independently from device and it have to be placed in the controlling box independently as well.

Scales can be ordered for the meters according to the attached table.



(1) Power meters



TRACON		U_n	I_n			
W45S-230/1	0-100	240 V~	X/5 A	1,5 %	$\times 1$	L1
W45S-400/4	0-100	400 V~	X/5 A	1,5 %	$\times 3$	L1, L2, L3, N

(2) Dial plates for power meters

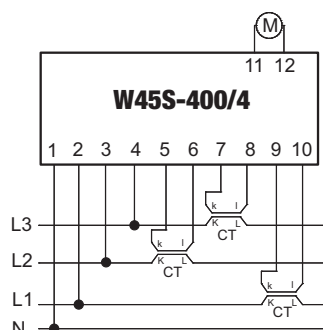
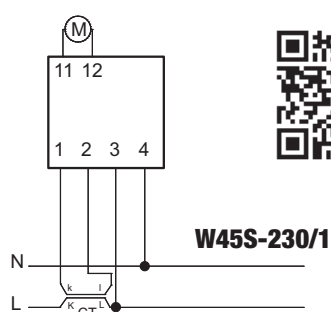
TRACON			
L1	L1, L2, L3, N		
SCALE-45 W/1-X	SCALE-45 W/4-X	0-P (kW)	1,5 %



Please always index the X and P data while ordering!

(3) Harmonization table for current transformers and dial plates for single or three phase power metering

1~	3~	1~	3~	1~	3~	1~	3~	1~	3~	1~	3~
30/5	7,5 kW	15 kW	120/5	30 kW	60 kW	400/5	100 kW	200 kW	1500/5	375 kW	750 kW
40/5	10 kW	20 kW	125/5	31,25 kW	62,5 kW	500/5	125 kW	250 kW	2000/5	500 kW	1000 kW
50/5	12,5 kW	25 kW	150/5	37,5 kW	75 kW	600/5	150 kW	300 kW	2500/5	625 kW	1250 kW
60/5	15 kW	30 kW	200/5	50 kW	100 kW	750/5	187,5 kW	375 kW	3000/5	750 kW	1500 kW
75/5	18,75 kW	37,5 kW	250/5	62,5 kW	125 kW	800/5	200 kW	400 kW	4000/5	1000 kW	2000 kW
80/5	20 kW	40 kW	300/5	75 kW	150 kW	1000/5	250 kW	500 kW	5000/5	1250 kW	2500 kW



L/28



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- Be updated

Our assortment is expanding quickly and continuously!

Our catalogue shows the assortment of March 2016.
Be up to date by our web page!

Direct digital ammeter

230 V AC	ABS	V1 UL94	⚡Ui 660 V	IP 40	IP 20	00878 (0,8-1,2)×Un		Ta -25...+65°C	A AC	Pictograms	L/O
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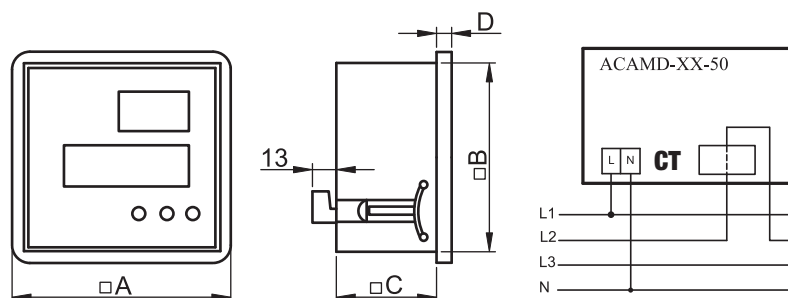
TRACON		×digit				C (mm)	D (mm)	m
ACAMD-96-50	96 × 96 mm	×3	0-50 A AC	± 0,1 %	91 mm	67	8	445 g
ACAMD-72-50	72 × 72 mm	×3	0-50 A AC	± 0,1 %	68 mm	70	6	245 g



This device is able to measure directly the current up to 50 A without any extra accessories. The pluggable terminals for power supply and metering are on the back side of device. The output for current metering is one low-current transformer with 50/5A ratio also on the back side of device; the phase wire has to pass through the CT. The meters are operating full automatically, a three digit display gives information from the measured value.



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Digital ammeter with adjustable CT transfer ratio (with relay output)

230 V AC	ABS	V1 UL94	⚡Ui 660 V	IP 40	IP 20	00878 (0,8-1,2)×Un		Ta -25...+65°C	AUX 1×CO	[mm ²] 1-2,5	A AC
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TRACON		×digit				C (mm)	D (mm)	m
ACAMD-96	96×96 mm	×4	0-9500 A AC	± 2 %	91 mm	67	8	305 g
ACAMD-72	72×72 mm	×4	0-9500 A AC	± 2 %	68 mm	70	6	250 g
ACAMD-P-96*	96×96 mm	×4	0-9500 A AC	± 2 %	91 mm	67	8	320 g
ACAMD-P-72*	72×72 mm	×4	0-9500 A AC	± 2 %	68 mm	70	6	265 g

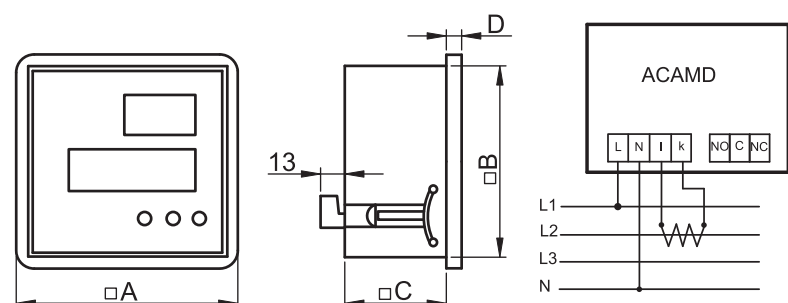
* Programmable relay output



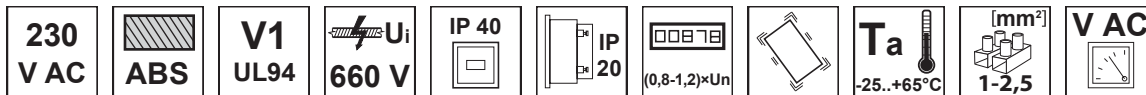
These meters are able to measure the effective value of alternate current, the CT-s transfer ratio is adjustable from 5/5 A to 10000/5 A. The device is programmable by front panel buttons. The microprocessor based programming enables the user to check the adjusted CT ratio, and define the critical current level for over-current alert via relay output. The ACAMD type meter is a version of ACAMD-P type without relay output.



L/28



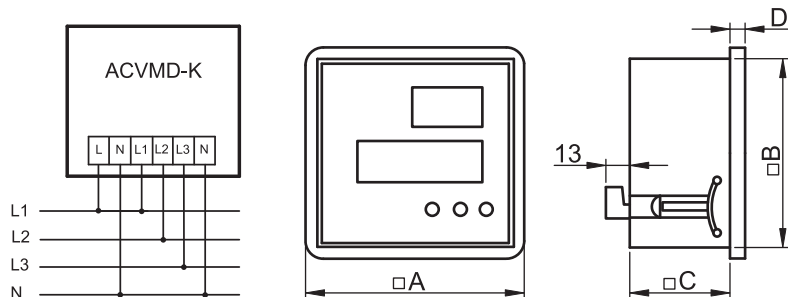
Digital voltmeter (with phase-selection)



TRACON		 ×digit	U _n				C (mm)	D (mm)	
ACVMD-96-500	96 × 96 mm	×3	240 V~	0-500 V AC	± 1 %	91 mm	67	8	300 g
ACVMD-72-500	72 × 72 mm	×3	240 V~	0-500 V AC	± 1 %	68 mm	70	6	240 g
ACVMD-K-96-500*	96 × 96 mm	×3	400 V~	0-500 V AC	± 1 %	91 mm	67	8	305 g
ACVMD-K-72-500*	72 × 72 mm	×3	400 V~	0-500 V AC	± 1 %	68 mm	70	6	245 g

* The needed phase can be selected by pushbutton on the front panel of device.

The device is suitable to measure the effective value of alternate voltage. The ACVMD-K-...-500 voltmeter is able to measure the effective value of three phase voltage; the result can be displayed to the user when desired. The power supply, the phase and the neutral wires can be mounted via plug-in terminals on the back of device. A three digit display gives information about the measured value.

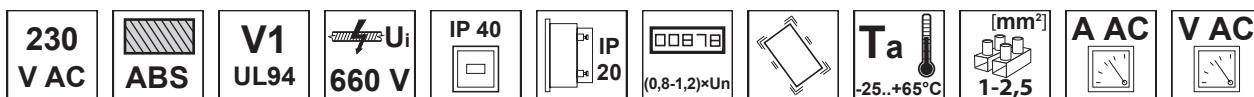


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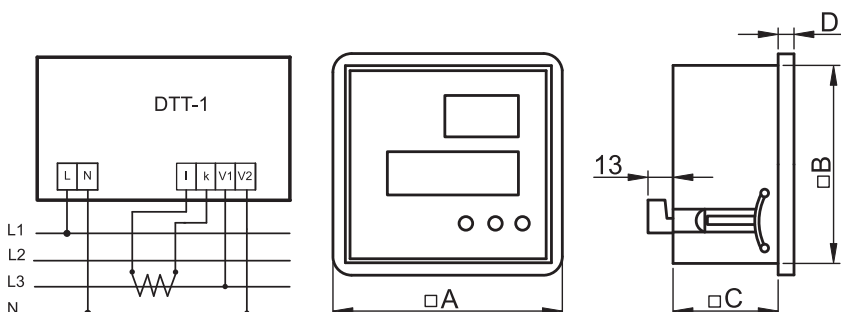


Digital ammeter and voltmeter with adjustable CT ratio



TRACON		 ×digit					C (mm)	D (mm)	
DTT-1-96	96×96 mm	×3/4	0-500 V AC	0-9500 A AC	± 1 %	91 mm	67	8	325 g
DTT-1-72	72×72 mm	×3/4	0-500 V AC	0-9500 A AC	± 1 %	68 mm	70	6	245 g

With this microcontroller based device the connected line's current and voltage values are measurable. The current transformer (CT) ratio is adjustable from 5/5 A to 9500/5 A. The device meters the true effective (TRMS) values; the CT ratio is adjustable by front panel pushbuttons. The pluggable terminals for power supply and metering are on the back side of device. The voltage value is readable from 3 digits, the current value from 4 digits LED display.



L/28

Digital frequency meter

230 V AC	ABS	V1 UL94	⚡ U _i 660 V	IP 40	IP 20	00878 (0,8-1,2)×U _n	⏏	Ta -25...+65°C	[mm ²] 1-2,5	Hz
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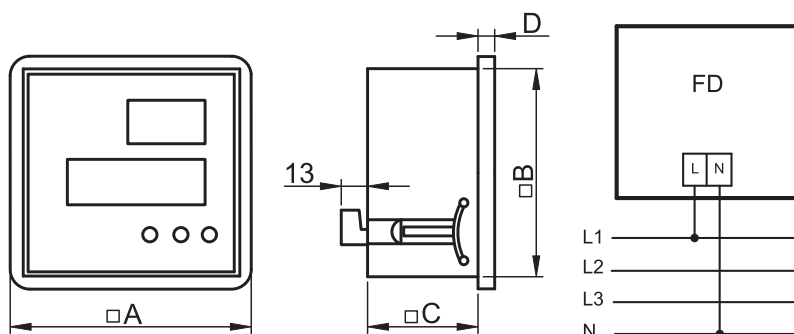
TRACON		×digit				C (mm)	D (mm)	
FD-96	96 × 96 mm	×3	45-75 Hz	± 1 %	91 mm	67	8	445 g
FD-72	72 × 72 mm	×3	45-75 Hz	± 1 %	68 mm	70	6	245 g



This microprocessor controlled sensitive and accurate meter is designed for measuring the electric line's frequency. The measured value is readable from 3 digits LED display. The pluggable terminals for power are on the back side of device.



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Digital power factor meter

230 V AC	ABS	V1 UL94	⚡ U _i 660 V	IP 40	IP 20	00878 (0,8-1,2)×U _n	⏏	Ta -25...+65°C	[mm ²] 1-2,5	COSφ
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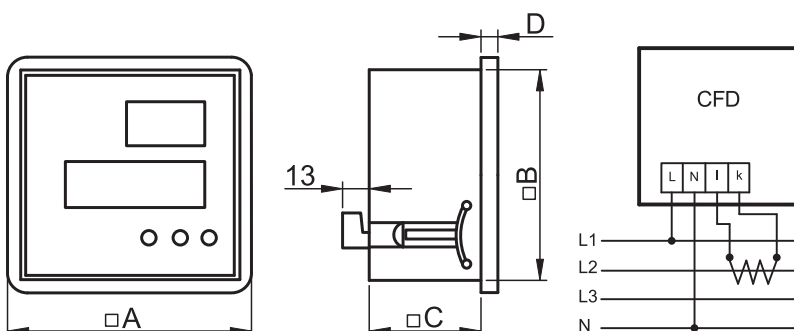
TRACON		×digit				C (mm)	D (mm)	
CFD-96	96×96 mm	×3	0,1-0,99	± 1 %	91 mm	67	8	305 g
CFD-72	72×72 mm	×3	0,1-0,99	± 1 %	68 mm	70	6	250 g



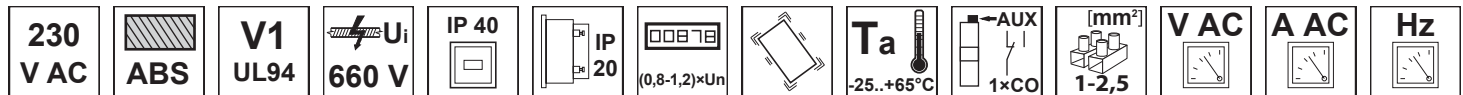
This is a microprocessor-controlled intelligent instrument used for measuring power factors in single- and three-phase lines. The measured value is readable from 3 digits LED display. The pluggable terminals for power are on the back side of device. Front panels LED-s are giving information about power factor's status.



L/28



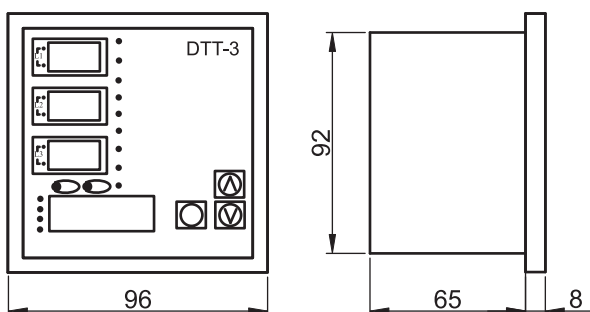
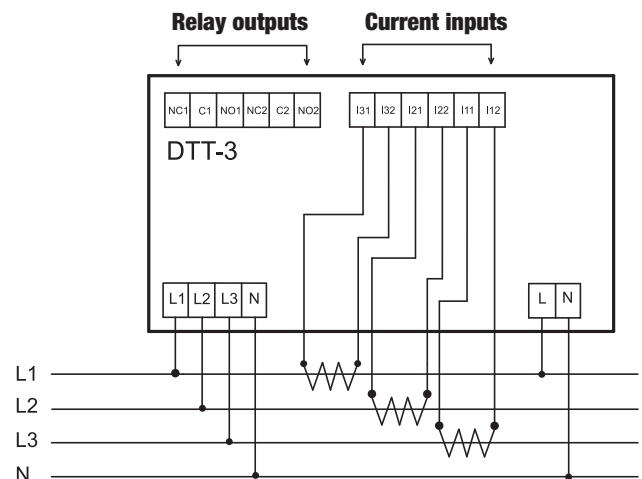
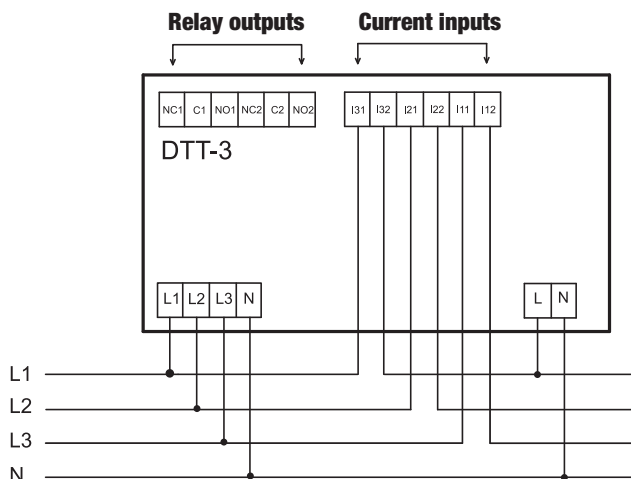
Digital multimeter



TRACON									
		xdigit	L-N	L-L	A	Hz			
DTT-2	96 × 96 mm	×4	0-300 V AC	0-500 V AC	0-9500 A AC	40-99,9 Hz	± 1 %	92 mm	470 g
DTT-3*	96 × 96 mm	×4	0-300 V AC	0-500 V AC	0-9500 A AC	40-99,9 Hz	± 1 %	92 mm	515 g

* Programmable relay output

This microcontroller based device was designed to measure the true effective value (TRMS) of current and voltage in all three phases and the frequency of the system. The multimeter is able to store minimum and maximum demands for both current and voltage, furthermore is capable to show these values to the user when desired. The DTT-3 type also has programmable under and over voltage limits, under and over current limits and delay time before producing contact output. The DTT-2 type is similar with DTT-3 type but without relay output. The DTT-3 type has two different contact outputs for current and voltage fault. The connection for power supply and metering is available through pluggable terminations on the back side of device. The multimeter displays the momentary value of the current in all three phases and the frequency of the net. The line or phase voltage can be selected with front panel pushbuttons and these momentary values are readable from the display. A LED lamp marks the selected phase. The current transformer (CT) ratio is also selectable with front panel pushbuttons.



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L/28

DTT-5 detective multimeter

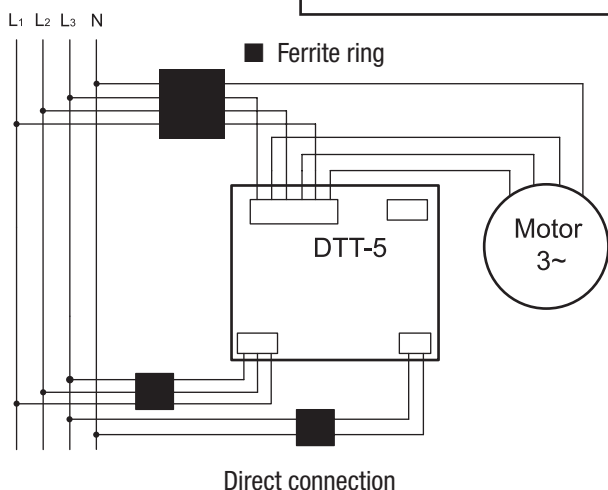
230 V AC	ABS	V1 UL94	U _i 660 V	IP 40	IP 20	00878 (0,8-1,2)×Un	Ta -25...+65°C	AUX 1×CO	[mm²] 1-2,5	V AC	A AC	Hz
TRACON												
DTT-5	96 × 96 mm	×3	0-280 V AC	0-500 V AC	0-9500 A AC	45-70 Hz	± 0.1 %	92 mm	305 g			



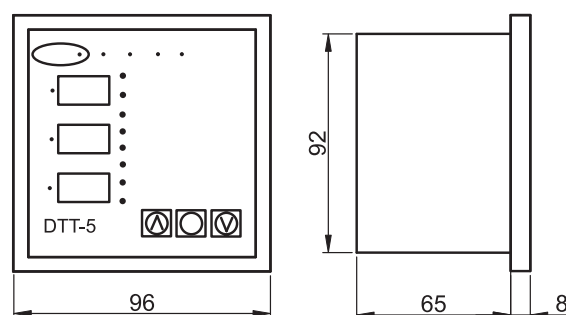
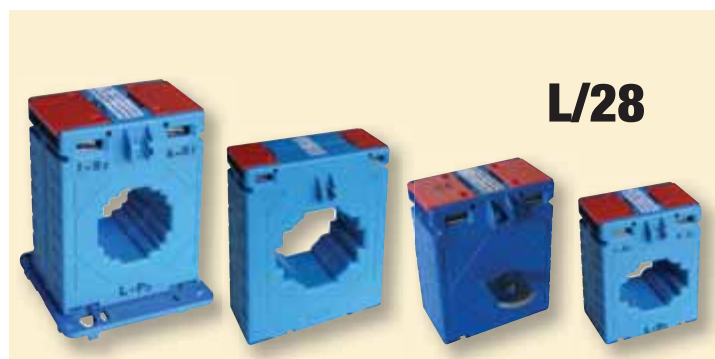
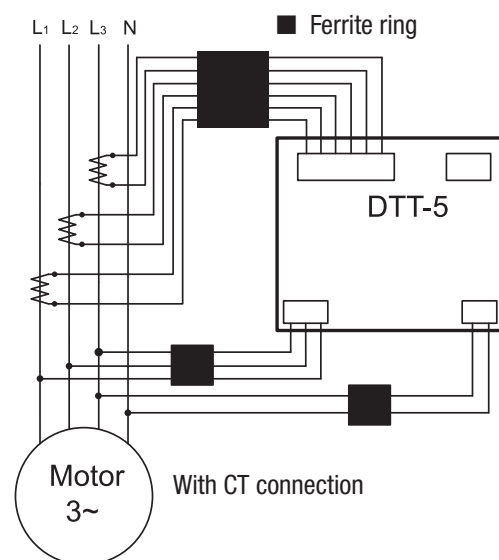
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EN 61010

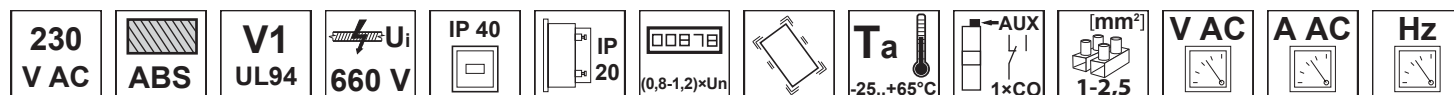
This device can measure current and voltage values and frequency of line on three phase systems. The detective multimeter was designed to sense, detect and inform impending mechanical and electrical failures in three phase motors. Modern detective multimeter technology with the capability of fault detection at early stage provides excellently reliable system monitoring advantages, a remarkable productivity of quality production, minimized maintenance and repair costs and extended life of machinery and equipment in use. The measured min/max current values are saved in memory and can be displayed by request. Moreover the device features adjustable over/under current and voltage protection limits with adjustable time delay settings prior to producing contact output for alert. The multimeter compares the stored values with the momentary values and switches on the alarm levels gradually according to deviation. The alarm output is a potential free changeover relay contact output what can work by voltage or current failure. Programming of the relay output allows for definition of the alarm level at which the relay shall react in case of abnormal current or voltage. The connection for power supply and metering is available trough pluggable terminations on the back side of device. The three digit LED displays are giving information from momentary metered values. A LED lamp signs the selected value. The current transformer (CT) ratio is also selectable with front panel pushbuttons.



The terminal wires have to pass trough ferrite rings as seen above in order to prevent electromagnetic disorder.

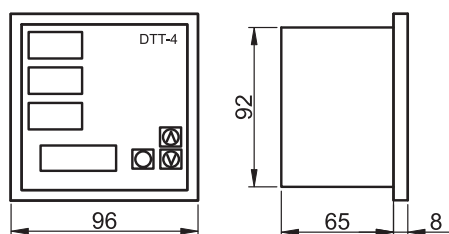


Power analyzer



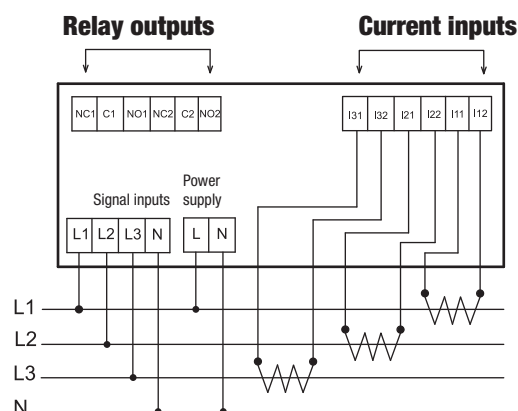
TRACON										
DTT-4	96 × 96 mm	×3/7	0-280 V AC	0-500 V AC	0-9500 A AC	45-70 Hz	± 1 %	± 2 %	92 mm	500 g

This device is ideal for measurement, monitoring and control of network electric parameters. Furthermore current, phase and line voltage frequency, power factor, real, apparent, reactive power and energy is measurable with the device; also able to meter both current and voltage harmonics of network. The four LED displays showing the needed values from 75 measurable parameters. The device meters the real effective values (TRMS), has two potential free, independent programmable relay outputs, which change state by alarm according to user adjusted limits. A LED indicator marks the selected. The connection for power supply and metering is available through plugable terminations on the back side of device. The current transformer (CT) ratio, the programming and the displayable value are all selectable with front panel pushbuttons. The operation of device is full automatic; its application is advantageous in all places, where the quality checking of energy-supply is important next to metering the electric values.



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EN 60051

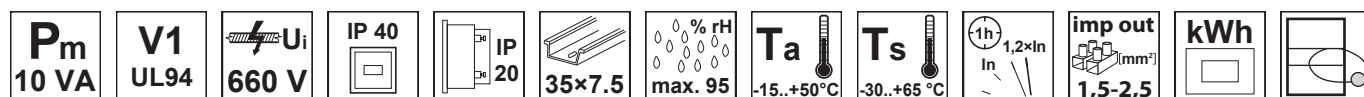
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Remark	Measured value	Alarm	All	L1	L2	L3
VLN	Phase voltage (V)	✓	✓ (*)	✓	✓	✓
VLL	Line voltage (V)	✓	✓ (*)	✓	✓	✓
I	Phase current (A)	✓	✓	✓	✓	✓
FRQ	Frequency (Hz)	—	—	✓	—	—
PF	Power factor (cos φ)	—	✓ (*)	✓	✓	✓
kW	Real power (kW)	✓	✓	✓	✓	✓
kVAr	Reactive power (kVAr)	✓	✓	✓	✓	✓
kVA	Apparent power (kVA)	✓	✓	✓	✓	✓
kWh	Real energy (kWh)	—	✓	—	—	—
kVArh.IND	Inductive reactive energy (kVArh)	—	✓	—	—	—
kVArh.CAP	Capacitive reactive energy (kVArh)	—	✓	—	—	—
kVAh	Apparent energy (kVAh)	—	✓	—	—	—
V _{THD}	Total harmonics distortion of voltage (%)	—	—	✓	✓	✓
V _{3 ... V₁₃}	Voltage harmonics (THD; odd harmonics up to 13 th)	—	—	✓	✓	✓
I _{THD}	Total harmonics distortion of current (%)	—	—	✓	✓	✓
I _{3 ... I₁₃}	Current harmonics (THD; odd harmonics up to 13 th)	—	—	✓	✓	✓

* Device signs the mean value of metered values in three phases.

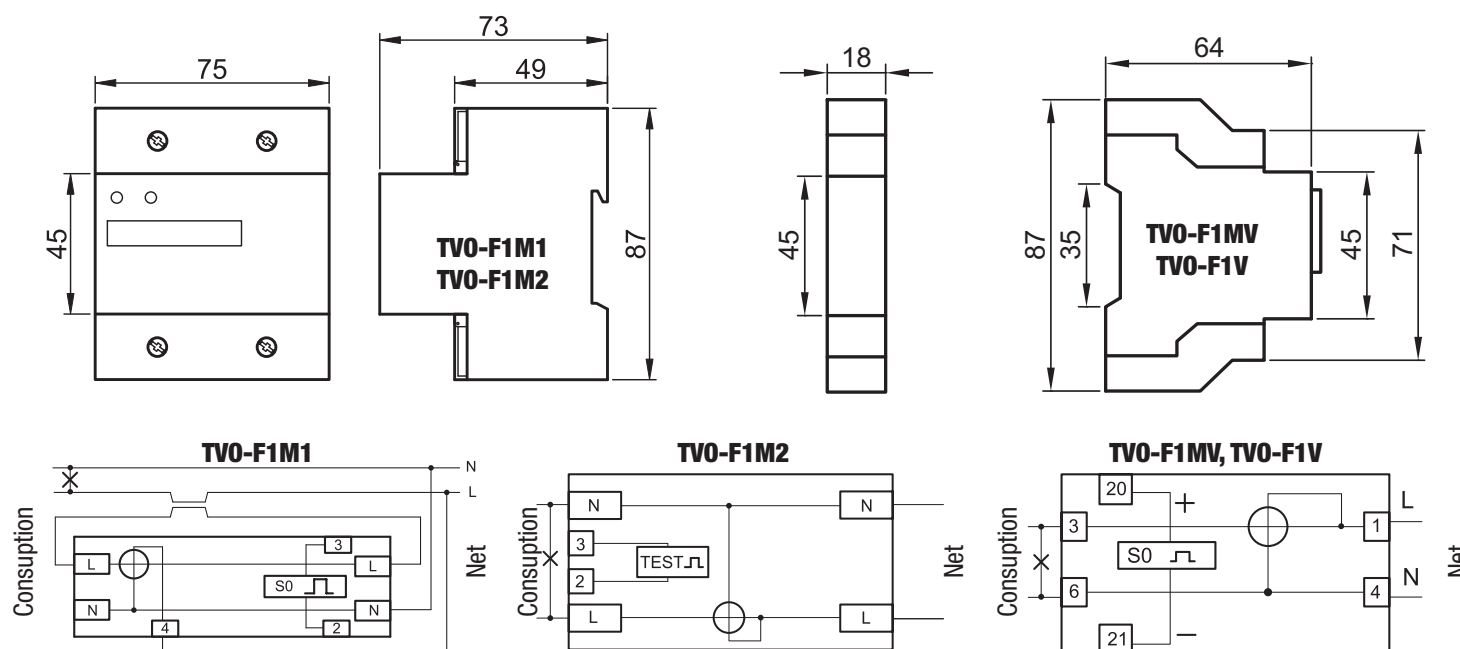
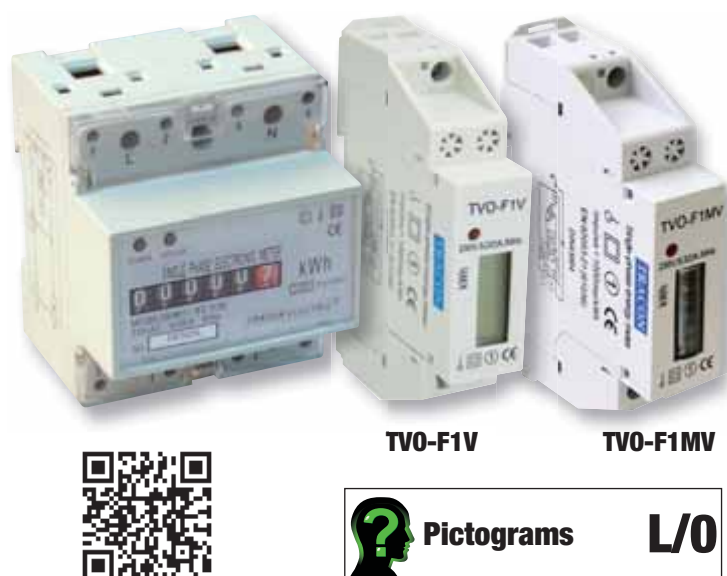
Energy meters, 1 phase



TRACON			U _n	I _b (I _{max})		imp/kWh S0 		 mm ²			
TV0-F1M1	CT 			220-240 V AC	5A/CT	0,002lp-lp	6.400	2	25	16	200 g
TV0-F1M2	DIRECT 			220-240 V AC	20 (60) A	80 mA-60 A	1.600	2	25	16	200 g
TV0-F1MV	DIRECT 			220-240 V AC	5 (30) A	20 mA-30 A	1.000	2	25	10	80 g
TV0-F1V	DIRECT 			220-240 V AC	5 (32) A	20 mA-32 A	1.000	2	25	10	80 g
TV0-F1-CT	CT 			220-240 V AC	5A/CT	0,002lp-lp	6.400	1	16	10	260 g

I_p – primary current of current transformer

CT – current transformer

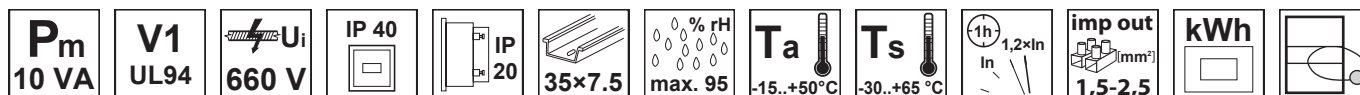


imp/kWh S_0	U_n min. 18 V, max. 27 V	I_{imp} >30 ms	I_n max. 27 mA
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Energy meters, 3 phases



TRACON			U_n	I_b (I_{max})		imp/kWh S0 			
TV0-F3M2	DIRECT→ kWh		3×230/400 V	20 (80) A*	80 mA-80 A	400	2	25 16	450 g
TV0-F3-4MCT	CT→ kWh		3×230/400 V	5A/CT	0,002Ip-Ip	1.600	1	16 10	370 g
TV0-F3-2	DIRECT→ kWh		3×230/400 V	20 (100) A*	80 mA-100 A	400	2	25 16	450 g
TV0-F3-4M	DIRECT→ kWh		3×230/400 V	10 (100) A*	80 mA-100 A	200	2	25 16	375 g

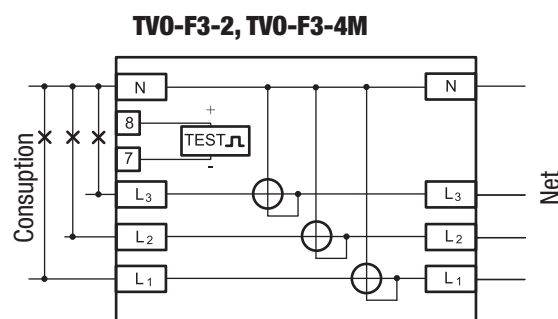
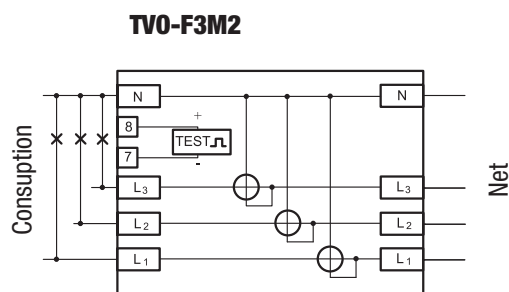
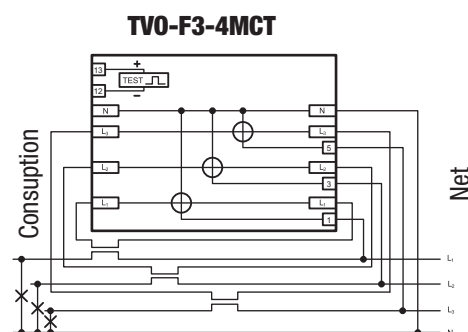
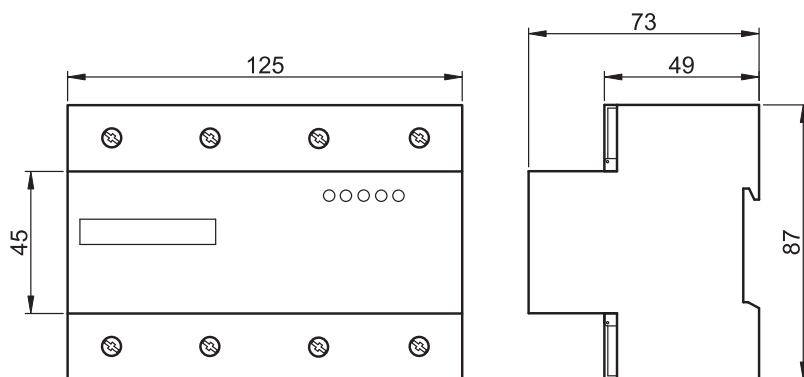
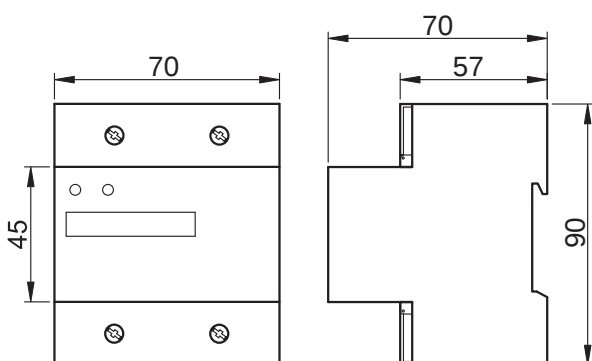
* per phase

Ip – primary current of current transformer
CT – current transformer



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EN 62053

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imp/kWh
S0 

 U_n

min. 18 V, max. 27 V

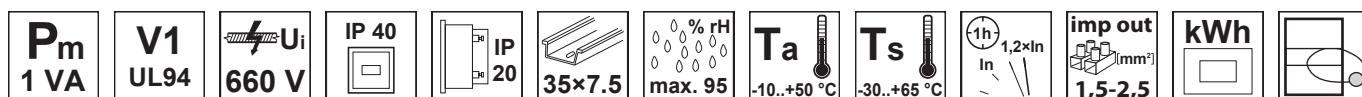
 I_{imp}

>30 ms

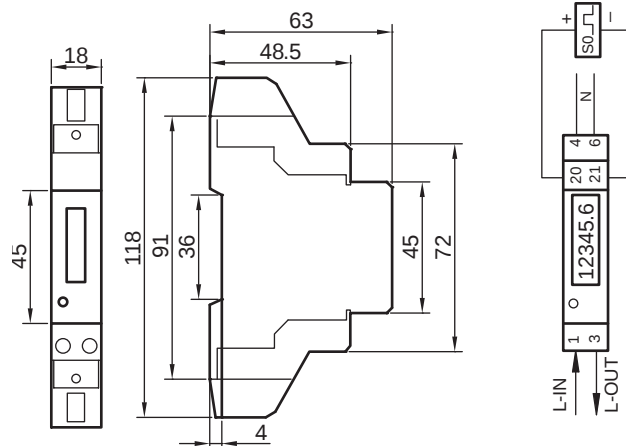
 I_n

max. 27 mA

Energy meters, 1 phase



TRACON			U _n	I _b (I _{max})		imp/kWh S0 				
TV0-F1-44	DIRECT→ 	 LCD	220-240 V AC	5 (32) A	20 mA-32 A	1.000	1	6	6	120 g
TV0-F1M-04	DIRECT→ 	 ELECTRO- MECHANICAL	220-240 V AC	5 (45) A	20 mA-45 A	1.000	1	6	6	120 g

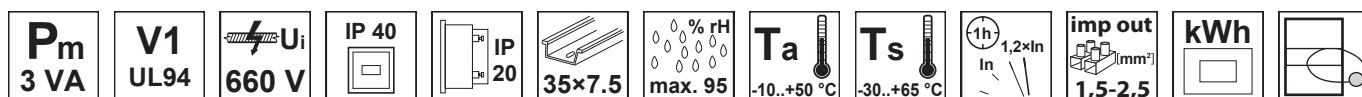


imp/kWh S0	U_n	I_{imp}	I_n
	min. 12 V, max. 27 V	>30 ms	max. 27 mA

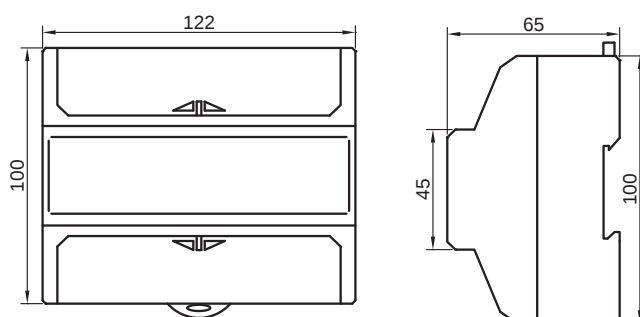
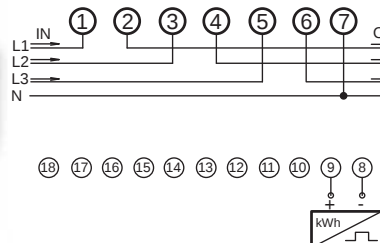
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Energy meters, 3 phases



TRACON			U _n	I _b (I _{max})		imp/kWh S0 				
TV0-F3-50	DIRECT→ kWh		3×230/400 V	10 (100) A	80 mA-100 A	800	2	25	16	450 g
TV0-F3M-38	DIRECT→ kWh		3×230/400 V	5 (100) A	80 mA-100 A	800	2	25	16	450 g



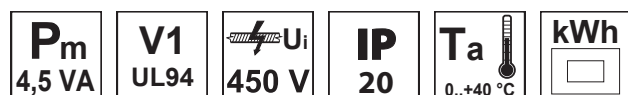
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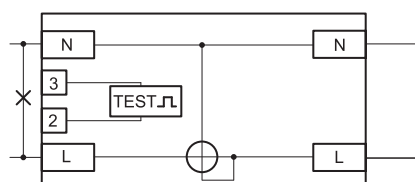
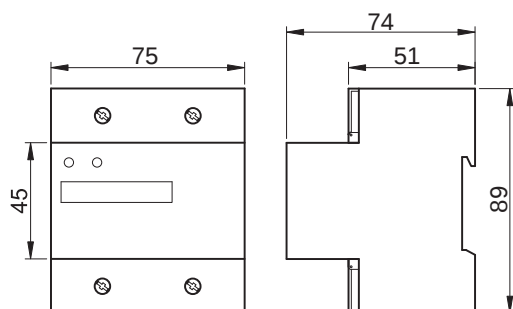
imp/kWh S0	U_n	I_{imp}	I_n
	min. 12 V, max. 27 V	>30 ms	max. 27 mA



Power meter, windows type, 1 phase



TRACON		U_n		I_b (I_{max})	imp/kWh S0	0 10 ha %	mm ²	m
TV0-F1-WT	DIRECT→ kWh	LCD	220-240 V AC	30 (100) A	80 mA-100 A	800	1 25 16	200 g

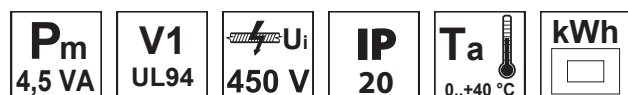


The wire must be put through the window, after that the screw make the contact with the insulation cutting. The reduction ring has been included for the thinner wires.

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Plug-in digital energy meter



TRACON		U_n		I_n	0 10 ha %	P_{max}	batt	m
TV0-1D216	DIRECT→ kWh	LCD	230 V AC	16 A	2	3.600 W	3×357 A	200 g
TV0-1D216F	DIRECT→ kWh	LCD	230 V AC	16 A	2	3.600 W	3×357 A	200 g

The TV0-1D216.. type plug-in digital energy meter can display on its LCD the energy consumption in kWh and the energy costs of household or office devices plugged into its socket outlet.

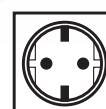
Services:

- Overload-alarm (warning signal)
- Display of maximal value of current and power
- Display of operation time
- Clock
- Energy cost calculation



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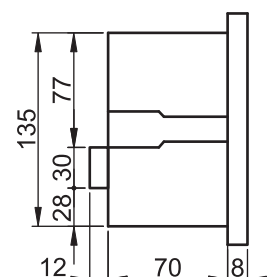
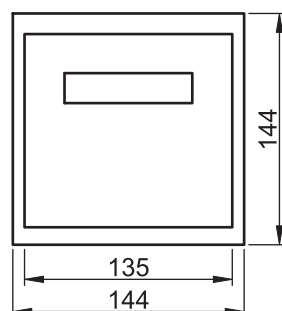
Correctors for one phase (for 7 or 12 capacitor groups)

230 V AC	ABS	V0 UL94	660 V	IP 54	IP 20	LCD	Ta -25...+55°C	[mm ²] 1-2,5	Pictograms	L/O
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TRACON								
TFJA-01	144 × 144 mm	2×16	7+1 (fix)	-25 °C ... +99 °C	0,02 A – 5,5 A	5/5 A...5000/5 A	135 mm	1000 g
TFJA-02	144 × 144 mm	2×16	12+1 (fix)	-25 °C ... +99 °C	0,02 A – 5,5 A	5/5 A...5000/5 A	135 mm	1050 g



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EN 60051
EN 61010



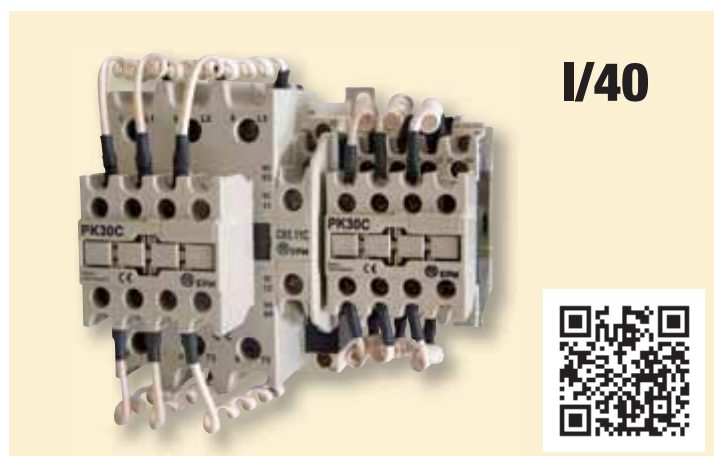
Hi-Tech, microprocessor based correctors with LCD display. They are suitable for setting 7 or 12 capacitor groups. These correctors are metering the parameters in one phase and the interference happens accordingly.

The value and the style of power ratio, the phase current and voltage, the voltage harmonics, the capacitor's temperature and the number of switched capacitor groups are displayable. On manual state the user can control the number of capacitor groups. During testing process the connected levels and the level's reactive power ratio is defined automatically. In automatic mode, the switching of capacitor groups takes place according to needed capacitor power and pre-adjusted parameters.

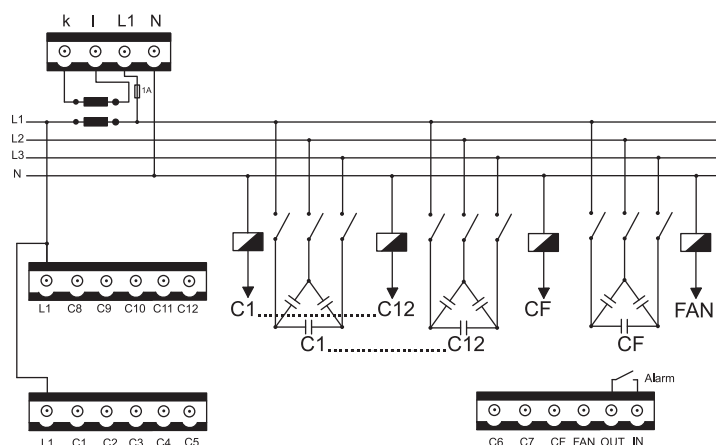
During rating process the switching of the levels follows a complex algorithm according to adjusted power factor value and level, protecting the capacitor groups and the switching contactors from run-down. The device has a potential free alarm output and it is programmable with front panel pushbuttons. The cooling is getting active according to pre-adjusted and memory stored level when the capacitor's temperature is rising up. The alarm output's active state is displayed by front panel LED.

Main functions

- adjustable power ratio ($\cos \varphi$) between 0,8 ind. – 1,0 cap;
- automatic and manual mode functions;
- exact initial capacitor power calculation;
- automatic current limit adjustment (C/k value);
- automatic polarity recognition on the CT terminals (k-l);
- adjustable overvoltage-overheat protection limit;
- alarm in case of over or under compensation;
- adjustable voltage-harmonics and overload protection limit;
- adjustable capacitor on and off switching time;
- power factor, phase voltage and current, frequency, temperature, voltage harmonics range metering, control, display;
- the art of failure and the switched number of levels also can be displayed.



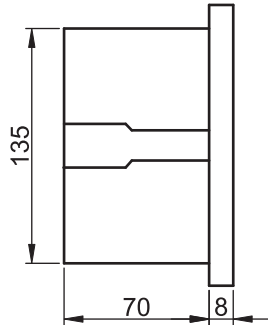
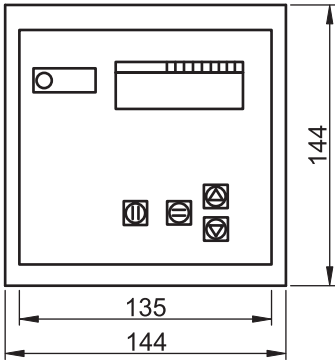
I/40



Correctors for three phases (for 7 or 12 capacitor groups)

P_m 10 VA	230/400 V AC	ABS	V0 UL94	U_i 660 V	IP 54	IP 20	LCD	T_a -25...+55°C	[mm ²] 1-2,5	% rH max. 90
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TRACON								
TFJA-03	144 × 144 mm	2×16	7+1 (fix)	-25 °C ... +99 °C	0,02 A – 5,5 A	5/5 A...5000/5 A	135 mm	1030 g
TFJA-04	144 × 144 mm	2×16	12+1 (fix)	-25 °C ... +99 °C	0,02 A – 5,5 A	5/5 A...5000/5 A	135 mm	1030 g



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EN 60051
EN 61010



Hi-Tech, microprocessor based correctors with LCD display. They are suitable for setting 7 or 12 capacitor groups. These correctors are metering the parameters in all three phase and the interference happens accordingly.

The metering of values is on analyzer level, the different levels capacitor power can be adjusted independent. In manual mode the user can control the number of capacitor groups. In automatic mode, the switching of capacitor groups takes place according to needed capacitor power and pre-adjusted parameters.

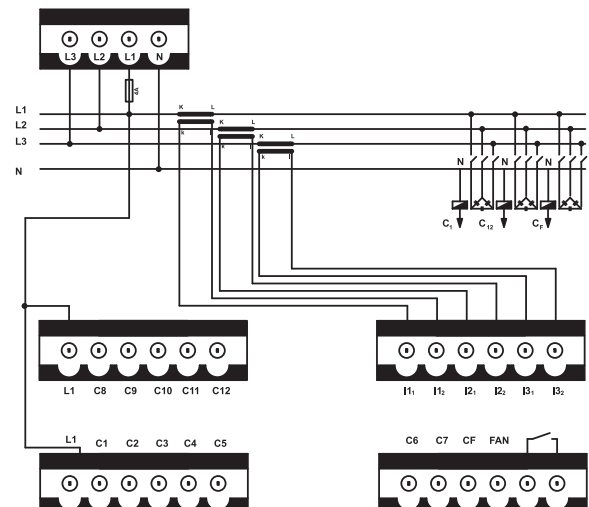
During rating process the switching of the levels follows a complex algorithm according to adjusted power factor value and level, protecting the capacitor groups and the switching contactors from run-down. The device has a potential free alarm output and it is programmable with front panel pushbuttons. The cooling is getting active according to pre-adjusted and memory stored level when the capacitor's temperature is rising up. The alarm output's active state is displayed by front panel LED.

Main functions

- Adjustable $\cos \varphi$ range between 0,8 ind. and 0,9 cap. values;
- Automatic / manual mode;
- Independent adjustable capacitor power limits;
- Automatic current detection;
- Adjustable over voltage and overheat limit;
- Adjustable high harmonic level;
- Adjustable capacitor switching delay;
- Adjustable total harmonic distortion voltage level (V_{THD} ; V_3 ; $V_5 \dots V_{13}$);
- Dimmable total harmonic distortion current level (I_{THD} ; I_3 ; $I_5 \dots I_{13}$);
- Capacitor test mode;
- Real, inductive, capacitive energy metering;

- Voltage, current, $\cos \varphi$, THD (total harmonic distortion) control on every phase;
- Capacitor power; temperature; frequency; total power factor control;
- Alarm in case of overvoltage, high temperature, high reactive and real energy rate, high harmonic ratio, with delay.

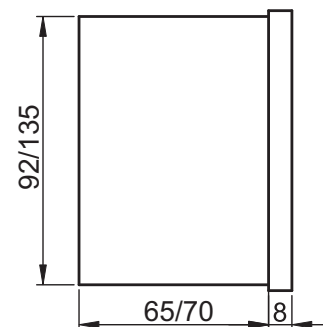
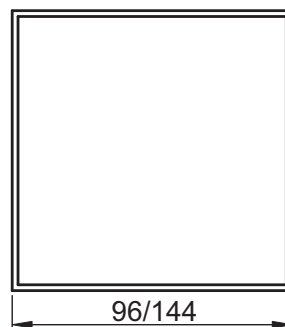
C/k adjustment:	automatic, manual
CT polarization:	automatic
A/D converter	10 bit
Sampling:	64 sample/period
Contact / alarm output:	250 V/5 A AC



Automatic or manual correctors

230 V AC	ABS	V0 UL94	⚡ U _i 660 V	IP 54	IP 20	LCD	⏏	Ta -25...+55°C	[mm ²] 1-2,5	Pictograms	L/O
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TRACON								
TFJA-05	144 × 144 mm	3×7	5+1 (fix)	-25 °C ... +99 °C	0,02 A – 5,5 A	5/5 A...5000/5 A	92 mm	1000 g
TFJA-06	96 × 96 mm	3×7	7+1 (fix)	-25 °C ... +99 °C	0,02 A – 5,5 A	5/5 A...5000/5 A	135 mm	600 g



These devices are microprocessor based correctors with LCD display. They are suitable for setting 5 or 7 capacitor groups. These correctors are metering the parameters in one phase and the interference happens accordingly. The switching of capacitor groups is coordinated with the metered capacitor powers and the pre-adjusted full reactive power values. During rating process the switching of the levels follows a complex capacitor metering and power factor determine algorithm according to adjusted power factor value and level, protecting the capacitor groups and the switching contactors from run-down. The device has a potential free alarm output and it is programmable with front panel pushbuttons. The cooling is getting active according to pre-adjusted and memory stored level when the capacitor's temperature is rising up. The alarm output's active state is displayed by front panel LED.

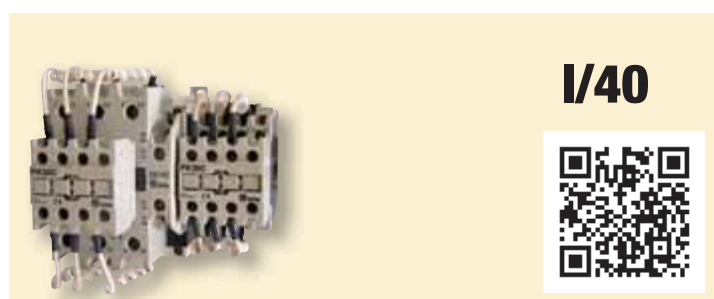
Main functions

- Adjustable power ratio ($\cos \varphi$) from 0,8 to 1;
- Automatic and manual mode;
- Capacitor power metering;
- Automatic Ck adjustment;
- Automatic current flow definition;
- Dimmable capacitor on/off time;
- Display of phase voltage and power factor values;
- In case of alarming the displaying happens with LED.

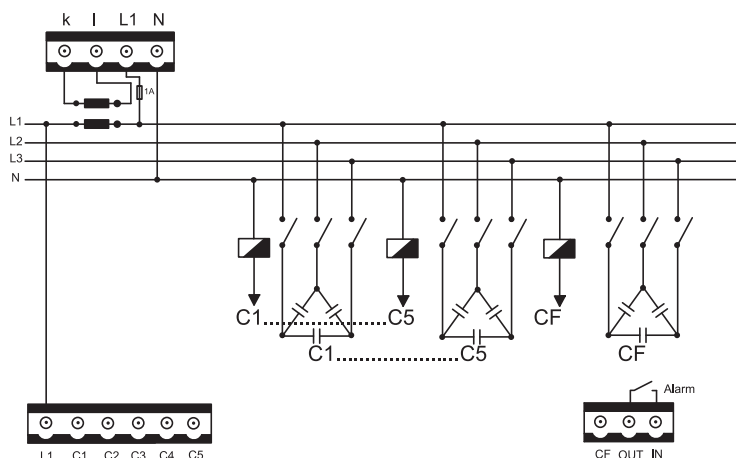
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EN 60051

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EN 61010

C/k adjustment: automatic
CT polarization: automatic
Contact output load: 250 V/5 A AC (TFJA-05), 250 V/3 A AC (TFJA-06)
Alarm output load: 250 V/5 A AC (TFJA-05), 250 V/3 A AC (TFJA-06)



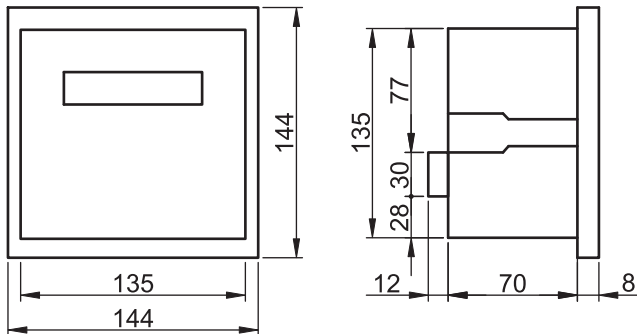
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Automatic operated correctors (for 5 capacitor groups)



TRACON								
TFJA-07	144 × 144 mm	3×7	5	-25 °C ... +99 °C	5/5 A...5000/5 A	1 %	135 mm	1.200 g



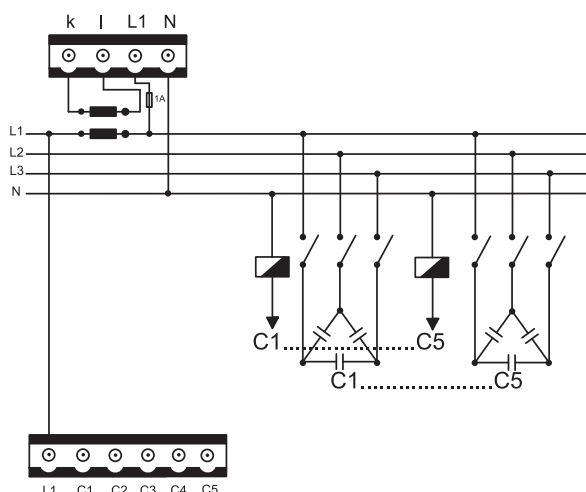
The TFJA-07 type reactive power corrector has full automatic operation and does not have any buttons on the front panel. The interference is happening according to phase voltage and current in one phase. The device switches on the five capacitor groups in five steps by microcontroller based rating algorithm with contactors if the $\cos \varphi$ value is less, than 0,95, and switches off the capacitors, when the $\cos \varphi$ value is more, than 1. The switch on of capacitor groups happening with 14 seconds, the switch off happens with 5 seconds time delay. In load free or less load state, where $\cos \varphi$ value is not between 0,95 and 1, the first capacitor level works as a joker capacitor; it switches on/off the capacitors according to defined delay time. The lowest capacitor power group has to be connected to the first level. During rating process the switching of the levels are happening by a complex algorithm protecting the capacitor groups and the switching contactors from run-down. The power factor value is readable from 3 digits front plate display. The front panel LED-s are giving information from number of switched levels and the power ratio's style. The capacitor group's power and the distributions for levels can be making by next table.

Capacitor outputs	1 st level	2 nd level	3 rd level	4 th level	5 th level
Capacitor power	1 -1,5 kVar	2,5 kVar	5 kVar	10 kVar	20 kVar

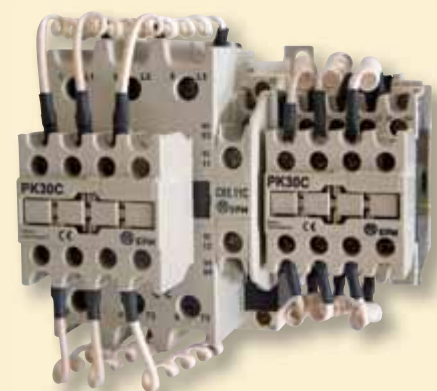
Input of voltage meter: L1, N
Sampling: 64 sample/period
Input of current meter: k, l
Max. load of current input: max. 7 A constant, 20 A / for 1 sec.
Contact / alarm output: 250 V/5 A AC

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EN 60051

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EN 61010



I/40

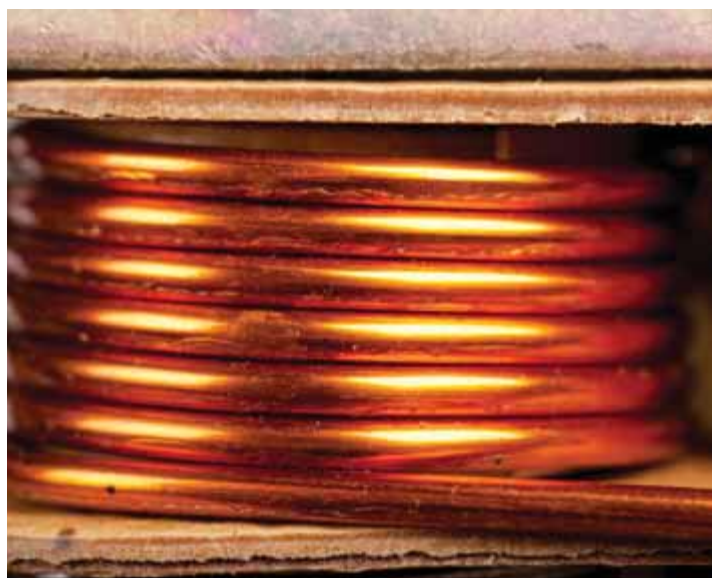


Low voltage current transformers

By using these devices, the measuring range of analogue or digital ammeters can be extended in the range of 5 - 3000 A. Similarly, the measuring range of the counters, power meters, multimeters, varimeters connected to the secondary contacts to the current transformers can also be extended.

Current transformers are consisted of a primary coil, a secondary coil and a ferromagnetic core. The primary coil is an actual coil built into the housing of the transformer or a cable or rail passing through the central hole of the transformer. In case of built-in primary coil or passed cable, the transformer has to be fixed by the kit delivered as accessory. In case of built in rail, the transformer shall be directly fastened to the rail.

The P1 end of the primary coil shall be connected to the network, the P2 end to the consumer. The S1 and S2 connectors shall be connected directly to the measuring instrument.



AVBS (5/5A-150/5A)

660
V AC

V0
UL94

U_i
720 V

U_{test}
1min
3 kV

F_s
security
5

1h
In 1,2×I_n

T_a
-5...+45 °C

I_{th}
50×I_n

I_{din}
2,5×I_{th}

Pictograms

L/0

RELEVANT STANDARD
EN 61010

TRACON		P _s	0 10 ha %	m
AVBS-5	5A/5A	2,5 VA	0,5	370 g
AVBS-15	15A/5A	2,5 VA	0,5	380 g
AVBS-30	30A/5A	2,5 VA	0,5	400 g
AVBS-50	50A/5A	2,5 VA	0,5	420 g
AVBS-60	60A/5A	2,5 VA	0,5	430 g
AVBS-75	75A/5A	2,5 VA	0,5	450 g
AVBS-100	100A/5A	2,5 VA	0,5	480 g
AVBS-150	150A/5A	2,5 VA	0,5	510 g

Type with built-in primary rail

AV30..SH (50/5A-200/5A)

660
V AC

V0
UL94

U_i
720 V

U_{test}
1min
3 kV

F_s
security
5

1h
In 1,2×I_n

T_a
-5...+45 °C

I_{th}
100×I_n

I_{din}
2,5×I_{th}

20 mm

30 mm

RELEVANT STANDARD
EN 60051

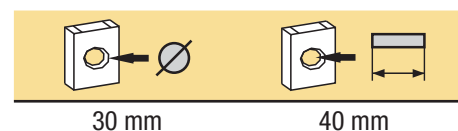
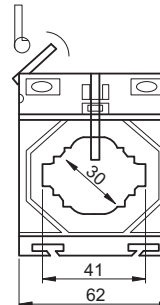
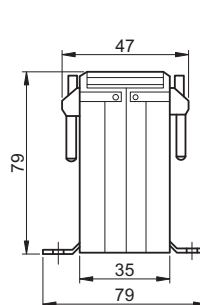
RELEVANT STANDARD
EN 61010

TRACON		P _s	0 10 ha %	m
AV3050SH	50A/5A	2,5 VA	1	460 g
AV3060SH	60A/5A	2,5 VA	1	480 g
AV3075SH	75A/5A	1,5 VA	1	520 g
AV30100SH	100A/5A	1,5 VA	1	530 g
AV30150SH	150A/5A	2 VA	1	530 g
AV30200SH	200A/5A	2,5 VA	0,5	540 g

AV40..SH (100/5A-500/5A)

660 V AC	V0 UL94	 U_i 720 V		U_{test} 1min 3 kV	F_s security 5	 $1,2 \times I_n$ I_n	T_a -5...+45 °C	I_{th} 50 $\times I_n$	I_{din} 2,5 $\times I_{th}$	 Pictograms	L/0
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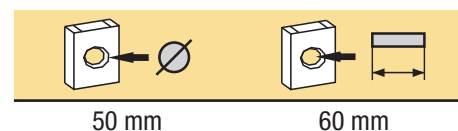
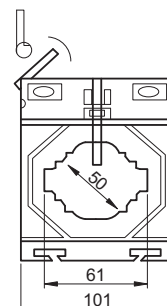
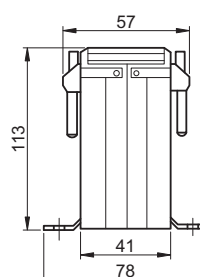
TRACON		P_s		
AV40100SH	100A/5A	1 VA	1	360 g
AV40150SH	150A/5A	1,5 VA	1	370 g
AV40200SH	200A/5A	2,5 VA	0,5	390 g
AV40250SH	250A/5A	3 VA	0,5	410 g
AV40300SH	300A/5A	5 VA	0,5	420 g
AV40400SH	400A/5A	2,5 VA	0,5	420 g
AV40500SH	500A/5A	5 VA	0,5	420 g



AV60..SH (600/5A-1200/5A)

660 V AC	V0 UL94	 U_i 720 V		U_{test} 1min 3 kV	F_s security 5	 $1,2 \times I_n$ I_n	T_a -5...+45 °C	I_{th} max. 50kA _{eff}	I_{din} 2,5 $\times I_{th}$
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TRACON		P_s		
AV60600SH	600A/5A	15 VA	0,5	450 g
AV60800SH	800A/5A	15 VA	0,5	480 g
AV601000SH	1000A/5A	15 VA	0,5	520 g
AV601200SH	1200A/5A	15 VA	0,5	520 g



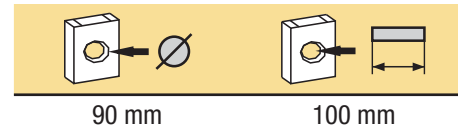
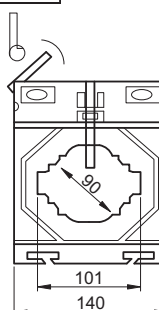
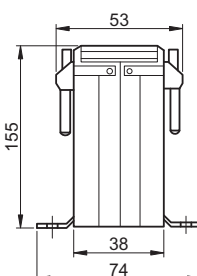
RELEVANT STANDARD
EN 60051

RELEVANT STANDARD
EN 61010

AV100..SH (1200/5A-3000/5A)

660 V AC	V0 UL94	 U_i 720 V		U_{test} 1min 3 kV	F_s security 5	 $1,2 \times I_n$ I_n	T_a -5...+45 °C	I_{th} max. 50kA _{eff}	I_{din} 2,5 $\times I_{th}$
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TRACON		P_s		
AV1001200SH	1200A/5A	15 VA	0,5	690 g
AV1001600SH	1600A/5A	15 VA	0,5	850 g
AV1002000SH	2000A/5A	15 VA	0,5	1.000 g
AV1002500SH	2500A/5A	15 VA	0,5	1.050 g
AV1003000SH	3000A/5A	15 VA	0,5	1.200 g

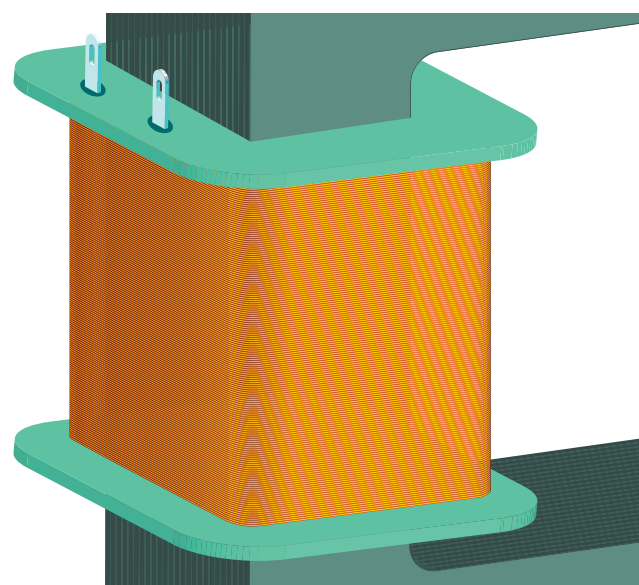


RELEVANT STANDARD
EN 60051

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EN 61010

Calibrated current transformer

These current transformers are fulfilling the requirements of EN 60044-1 standard and meeting the requirements of 0,5S accuracy class. If user wants to use them for account measuring, the current transformers have to be calibrated by the National Trade Licensing Office.



RELEVANT STANDARD
EN 60051

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EN 61010

RELEVANT STANDARD
EN 60051

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EN 61010

EPSA30 (150/5A-400/5A) 1,5 VA

660
V AC

MKEH
-MH

U_i
720 V



U_{test}
1min
3 kV

F_s
security
5

$\frac{1}{h}$
 I_n 1,2 $\times I_n$

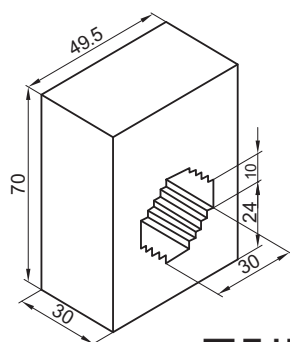
T_a
-5...+45 °C

I_{th}
60 $\times I_n$

I_{din}
2,5 $\times I_{th}$

Pictograms

L/0



TRACON

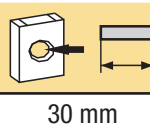
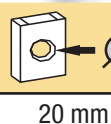


P_s



m

EPSA30150-1,5	150/5A	1,5 VA	0,5S	300 g
EPSA30200-1,5	200/5A	1,5 VA	0,5S	300 g
EPSA30250-1,5	250/5A	1,5 VA	0,5S	300 g
EPSA30300-1,5	300/5A	1,5 VA	0,5S	300 g
EPSA30400-1,5	400/5A	1,5 VA	0,5S	300 g



RELEVANT STANDARD
EN 60051

RELEVANT STANDARD
EN 61010

EPSA30 (150/5A-500/5A) 2,5 VA

660
V AC

MKEH
-MH

U_i
720 V



U_{test}
1min
3 kV

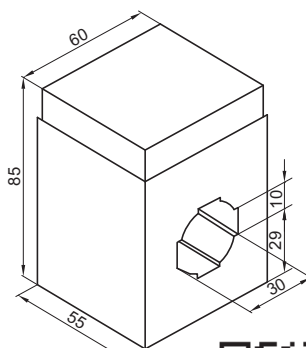
F_s
security
5

$\frac{1}{h}$
 I_n 1,2 $\times I_n$

T_a
-5...+45 °C

I_{th}
60 $\times I_n$

I_{din}
2,5 $\times I_{th}$



TRACON

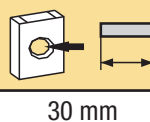
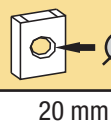


P_s



m

EPSA30150-2,5	150/5A	2,5 VA	0,5S	300 g
EPSA30200-2,5	200/5A	2,5 VA	0,5S	300 g
EPSA30250-2,5	250/5A	2,5 VA	0,5S	300 g
EPSA30300-2,5	300/5A	2,5 VA	0,5S	300 g
EPSA30400-2,5	400/5A	2,5 VA	0,5S	300 g
EPSA30500-2,5	500/5A	2,5 VA	0,5S	300 g



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EN 60051

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EN 61010

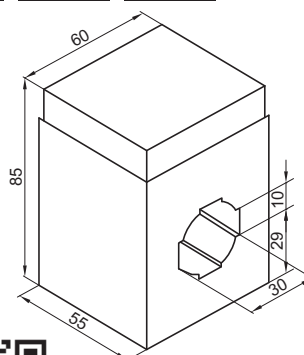
EPSA30 (150/5A-500/5A) 2,5 VA

660 V AC	MKEH -MH	 U_i 720 V		U_{test} 1min 3 kV	F_s security 5	 $1h$ I_n 1,2x I_n	T_a -5...+45 °C	I_{th} 60x I_n	I_{din} 2,5x I_{th}	 Pictograms	L/O
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TRACON		P_s		
EPSA30150-5	150/5A	5 VA	0,5S	300 g
EPSA30200-5	200/5A	5 VA	0,5S	300 g
EPSA30250-5	250/5A	5 VA	0,5S	300 g
EPSA30300-5	300/5A	5 VA	0,5S	300 g
EPSA30400-5	400/5A	5 VA	0,5S	300 g
EPSA30500-5	500/5A	5 VA	0,5S	300 g

RELEVANT STANDARD
EN 60051

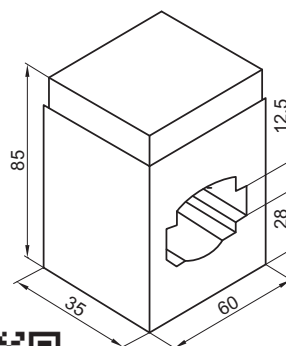
RELEVANT STANDARD
EN 61010



EPSA40 (250/5A-500/5A) 2,5-5 VA

660 V AC	MKEH -MH	 U_i 720 V		U_{test} 1min 3 kV	F_s security 5	 $1h$ I_n 1,2x I_n	T_a -5...+45 °C	I_{th} 60x I_n	I_{din} 2,5x I_{th}
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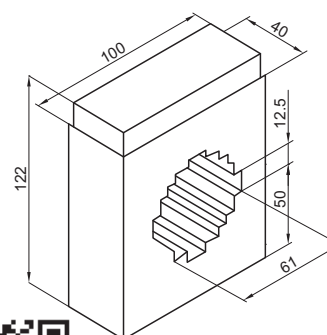
TRACON		P_s		
EPSA40250-2,5	250/5A	2,5 VA	0,5S	300 g
EPSA40300-2,5	300/5A	2,5 VA	0,5S	300 g
EPSA40400-2,5	400/5A	2,5 VA	0,5S	300 g
EPSA40500-2,5	500/5A	2,5 VA	0,5S	300 g
EPSA40250-5	250/5A	5 VA	0,5S	300 g
EPSA40300-5	300/5A	5 VA	0,5S	300 g
EPSA40400-5	400/5A	5 VA	0,5S	300 g
EPSA40500-5	500/5A	5 VA	0,5S	300 g



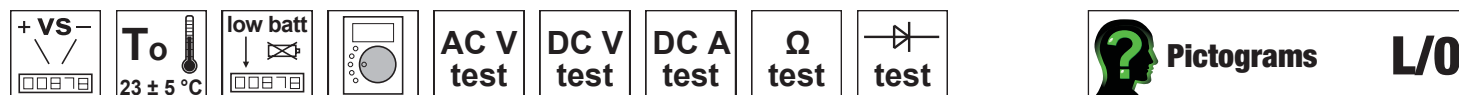
EPSA60 (500/5A-1250/5A) 2,5-5 VA

660 V AC	MKEH -MH	 U_i 720 V		U_{test} 1min 3 kV	F_s security 5	 $1h$ I_n 1,2x I_n	T_a -5...+45 °C	I_{th} 60x I_n	I_{din} 2,5x I_{th}
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TRACON		P_s		
EPSA60500-2,5	500/5A	2,5 VA	0,5S	400 g
EPSA60500-5	500/5A	5 VA	0,5S	400 g
EPSA60600-5	600/5A	5 VA	0,5S	400 g
EPSA60750-5	750/5A	5 VA	0,5S	400 g
EPSA60800-5	800/5A	5 VA	0,5S	400 g
EPSA601000-5	1000/5A	5 VA	0,5S	400 g
EPSA601200-5	1200/5A	5 VA	0,5S	400 g
EPSA601250-5	1250/5A	5 VA	0,5S	400 g



Digital multimeter



TRACON	xdigit	V	I	Ω	°C	batt	L H W	m
M300	× 3,5	±(1,2%+10d)	±(1,2%+10d)	±(1,2%+10d)	–	12 V, 23 A	120×70×21 mm	110 g



RELEVANT STANDARD
EN 61010



DC V test	2-20-200-500 V
AC V test	2-20-200-500 V
DC A test	200 mA
Ω test	1-10-100-1000 Ω
test	0,8 mA / 3,2 V

Digital multimeter



TRACON	xdigit	V	I	Ω	°C	batt	L H W	m
MT-02	× 3,5	±(1,2%+10d)	±(2%+2d)	±(1%+2d)	±(3%+2d)	9 V, 6F22	158×75×35 mm	135 g

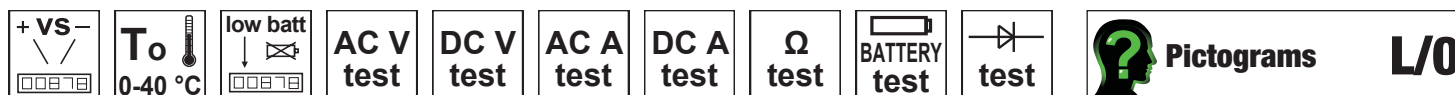


RELEVANT STANDARD
EN 61010



DC V test	0,2-2-20-200-1000 V
AC V test	200-750 V
DC A test	2m-20m-200m-10 A
Ω test	0,2-2-20-200-2000-20000 kΩ
°C/°F test	-20...1370 °C
hFE test	10 μA/2,8 V
test	1,5 mA/3 V

Digital multimeter



TRACON	xdigit	V	I	Ω	°C	batt	L H W	m
EM420A	× 3,5	±(1,2%+5d)	±(3%+10d)	±(1,5%+5d)	±(5%+4d)	1,5 V, 3×AAA	158×75×35 mm	200 g

DC V test	aut. 0,2-2-20-200-600 V
AC V test	aut. 2-20-200-600 V
AC A test DC A test	200µ-2m-20m-200m-2-10 A
Ω test	0,2-2-20-200-2000-20000 k Ω
°C/°F test	-20...1000 °C / -4...1832 °F
hFE test	2 µA / 1 V
BATTERY test	1,5-3 V / 30 mA 9 V / 12 mA
test	1,5 V
AUTO OFF	10 min.



RELEVANT STANDARD
EN 61010



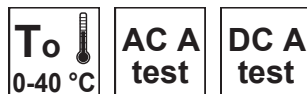
Function buttons

button	ON-OFF switch
backlight	push ON-OFF for 2 sec
FUNC.	DC-AC and °C/ °F selector

RANGE
MAX
DATA

Measuring range selector
Holds the maximal measured value
Holds the momentary measured value

Digital clamp meter for EM420A device



TRACON	I	batt	L H W	m
EM264	±(2,5%+3d)	9 V, 1×6F22	186×73×40 mm	350 g

The EM264 digital clamp meter is an auxiliary device for digital multimeters to measure AC/DC current without breaking the measured wire.

DC A test	40-400 A
AC A test	40-400 A
40 A	10 mV/A
400 A	1 mV/A



Function buttons
DC ZERO
IKON



zero adjust at DC measuring
Measuring range selector

Digital clamp meter



TRACON	xdigit	V	I	Ω	°C	batt	L H W	m
EM306B	× 3,5	±(1,2%+3d)	±(5%+5d)	±(1,5%+2d)	–	3 V, 3×CR2032	151×65×34 mm	127 g



RELEVANT STANDARD
EN 61010

DC V test	600 V
AC V test	600 V
AC A test	20-200-400 A
Ω test	2-200 kΩ
test	3 V

Function buttons
HOLD

Holding the momentary value

Digital clamp meter



TRACON	xdigit	V	I	Ω	°C	batt	L H W	m
LF266	× 3,5	±(2%+5d)	±(2,5%+5d)	±(1,2%+5d)	–	9 V, 1×6LA61	240×90×40 mm	320 g



RELEVANT STANDARD
EN 61010

DC V test	1000 V
AC V test	750 V
AC A test	200-1000 A
Ω test	0,2-20 kΩ

Function buttons
HOLD

Holding the momentary value

Tool to follow wires

TRACON				
EM422A	1,5 V, 2×AAA	3 V, 4×LR44	151×65×34 mm	127 g

This tool is suitable to follow non active wires. It has two parts, a transmitter and a receiver. In case of ideal circumstances it can sense in 30 cm range. This range depends on the ambient circumstances like insulation, other wires etc.

Transmitter

The transmitter has five adaptors to connect to the wire

- RJ-11 connector
- Koax connector
- Double crocodile clip
- Automotive fuse connector

The adaptors can be found under the front plate

Receiver

To activate the receiver please push and hold the **TEST** button so the receiver senses the signal of transmitter. Move the device towards the wire to sense. If the wire is continuous a ton signal appears and the light of **LED** increases. The sensitivity of receiver can be adjusted with the **Sensitivity button**.



RELEVANT STANDARD
EN 61010

Infrared thermometer

TRACON					
HM-01	9 V, 1×6F22	-20 °C ... +320 °C	-4 °F ... +608 °F	45×155×90 mm	150 g

- Temperature measurement without contact, °C/°F switchover
- Spot laser beam for precise positioning
- Clearly visible LCD display with blue background lighting
- Warning for low battery
- Data- Hold function; carrying bag



RELEVANT STANDARD
EN 61010



Pocket digital multimeter with search light

							
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 **Pictograms** **L/0**

TRACON							
FV-03	× 3,5	± (1,5 % + 3 d)	± (1,2 % + 5 d)	± (2,0 % + 2 d)	3 V, 1×CR 2032	155×55×26 mm	130 g

DC V test	200 mV–2 V–20 V–200 V–600 V
AC V test	2 V–20 V–200 V–600 V
AC A test DC A test	20 mA–200 mA
Ω test	200 Ω, 2 kΩ, 20 kΩ, 200 kΩ, 2 MΩ, 20 MΩ
Diode test	1,5 V; 0,5 mA



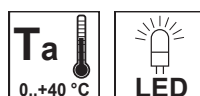
RELEVANT STANDARD
EN 61010

Voltage tester



TRACON	batt	H W L	m
GK9	–	223 × 62 × 34 mm	105 g
DC V test	6-12-24-50-120-230-400 V		
AC V test	6-12-24-50-120-230-400 V		

Voltage tester



TRACON	batt	H W L	m
GK6A	1,5 V, 2 × AAA	153 × 36 × 24 mm	70 g
AC V test	100-1000 V		

Function buttons

ON-OFF button
Light

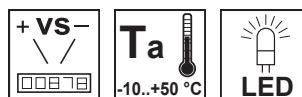
Induction controlling instrument



TRACON	batt	H W L	m
FV-01	–	130 × 18 × 15 mm	15 g
DC V test	12-36-55-110-230 V		
AC V test	12-36-55-110-230 V		

RELEVANT STANDARD
EN 61010

Voltage monitoring instrument



TRACON	batt	H W L	m
FV-05	–	142 × 21 × 18 mm	30 g
AC V test	200-600 V		

This instrument is applicable to detect voltages from 200 V to 600 V without direct contact (e.g. in wires under surface). If the color of the sensor edge changes to red (does not blink) means there is a live line underneath.

Voltage tester screwdriver



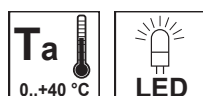
TRACON			
FK-10	–	190 × 18 × 18 mm	30 g

AC V test	0-250 V
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RELEVANT STANDARD
EN 61010

FK-02 Phase searching screwdriver



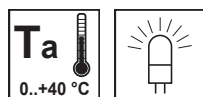
TRACON			
FK-02	1 × LR44	140 × 21 × 21 mm	30 g

AC V test	0-250 V
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The device can indicate the live state of wires. The LED lights if the driver's head reaches a live conductor and the user's finger touches the metal insert on the side of device. Continuity test can also be done on a potential-free conductor by touching one end of the wire with the screwdriver's head and the other end with the test person's finger. The metal insert must also be touched during the process.

Motor vehicle testing lamp



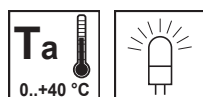
TRACON			
FV-06	–	118 × 11 × 11 mm	30 g

DC V test	6-24 V
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Operation time: max. 10 sec

Multifunction control device



TRACON	AC V test		
FV-07	110-250 V	136 × 20 × 15 mm	20 g



Testing of light bulbs and fuses: The tester must hold the light bulb or the fuse in one hand at one of the contact points and touch the screwdriver end of control device to the other contact point. At the same time the tester person has to touch the small metal plate on the side of control device. If the control lamp lights up, the tested light bulb or fuse is operable.

Testing the of wire continuity: The tested device must be under voltage. The tester person must hold the control device with touching the metal plate on the side. The screwdriver end of control device must follow the side of the tested wire. If the wire is under voltage the control lamp will blink or shine if the continuity of wire is correct. If the control lamp does not light, there is a discontinuity somewhere on the wire.