PANEL POWER FACTOR METERS WITH BUILT-IN TRANSDUCERS

FA39 TYPE - 96 × 96 mm
FA32 TYPE - 144 × 144 mm

CE

APPLICATION

FA39 and FA32 panel power factor meters are destined for measurements of the phase angle between the voltage and current in single-phase or three-phase AC power networks.
These meters are calibrated to correspond to the cosine of the angle, i.e. the power factor.
These meters can be mounted on panels of any kind of materials.

TECHNICAL DATA

Measuring ranges:	**0.5 cap ...1 ...0.5 ind** 0.8 cap ...1 ...0.2 ind 0.85 cap ...1 ...0.85 ind 0 ind ...1
Input voltage (one of the series):	
- for single-phase meters	60, 100, 110, 230, 400 V
- for meters working in symmetrically loaded three-phase networks	100, 110, 230, 400, 415, 440, 500 V
Input current	1 A or 5 A
Accuracy class	1.5
Rated operating conditions:	
- ambient temperature	5...23...40°C 5...35...55°C (on request for tropical execution)
- air relative humidity	25...85%
- input voltage	Un ±15%
- input current	20 ...40 ...100 ...120% In
- frequency of the input voltage	45 ...50 ...60 ...65 Hz
- external magnetic field	≤ 400 A/m
- working position	acc. order ±5° (table 1)
Additional errors	acc. IEC60051 - 5 standard
Power consumption	
- in voltage circuit	≤ 8 VA
- in current circuit	≤ 0.2 VA
Protection grades	
- case	IP 50 or IP 54 (on request)
- terminals	IP 20 (with a terminal shroud)
Electromagnetic compatibility:	
The meter fulfils CE mark requirements:	
- emission	acc. EN50081-2 standard
- immunity	acc. EN50082-2 standard
Safety requirements	
- installation category	III
- level of polution	2
- maximal working voltage in relation to the earth	600 V a.c.
Housing material	thermoplastics
Weight	
- FA39	230 g
- FA32	400 g

ACCESSORIES

With the meter we supply:
- two screw holders to fix the meter on the panel,
- a terminal shield,
- a service manual.

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WORKING POSITIONS

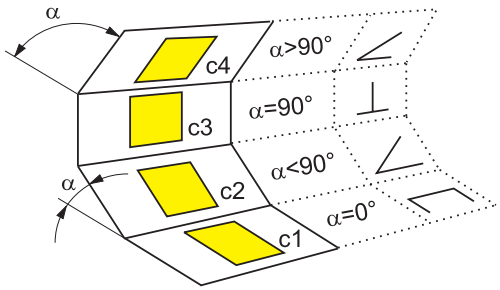
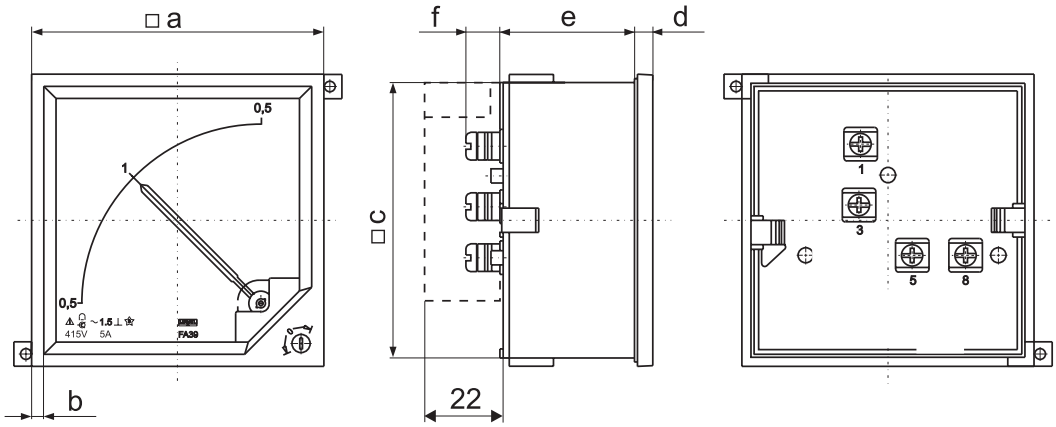


Table 1

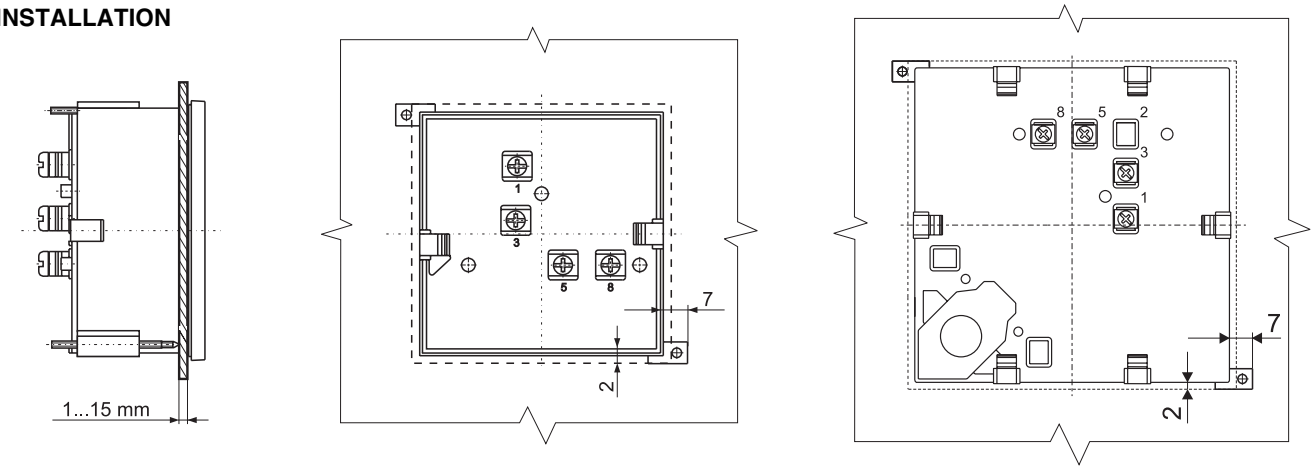
Code	Working position
O	c3
A	c1
B	c2, α = 15°
C	c2, α = 30°
D	c2, α = 45°
E	c2, α = 60°
F	c2, α = 75°
H	c4, α = 105°
I	c4, α = 120°

EXTERNAL DIMENSIONS



Type	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Panel cut-out dimensions
FA39	96	4	92	6	45	10...20	$92^{+0.8} \times 92^{+0.8}$ mm
FA32	144	4.5	137	6	48	10...20	$138^{+1} \times 138^{+1}$ mm

INSTALLATION



FA39 (3-phase execution)

FA32 (3-phase execution)

One should prepare in the panel an appropriate hole at dimensions depended on the meter type.
The thickness of the material of which the panel is made, cannot exceed 15 mm. The meter is fixed to the panel by two screw holders situated on freely opposite corners of the case.

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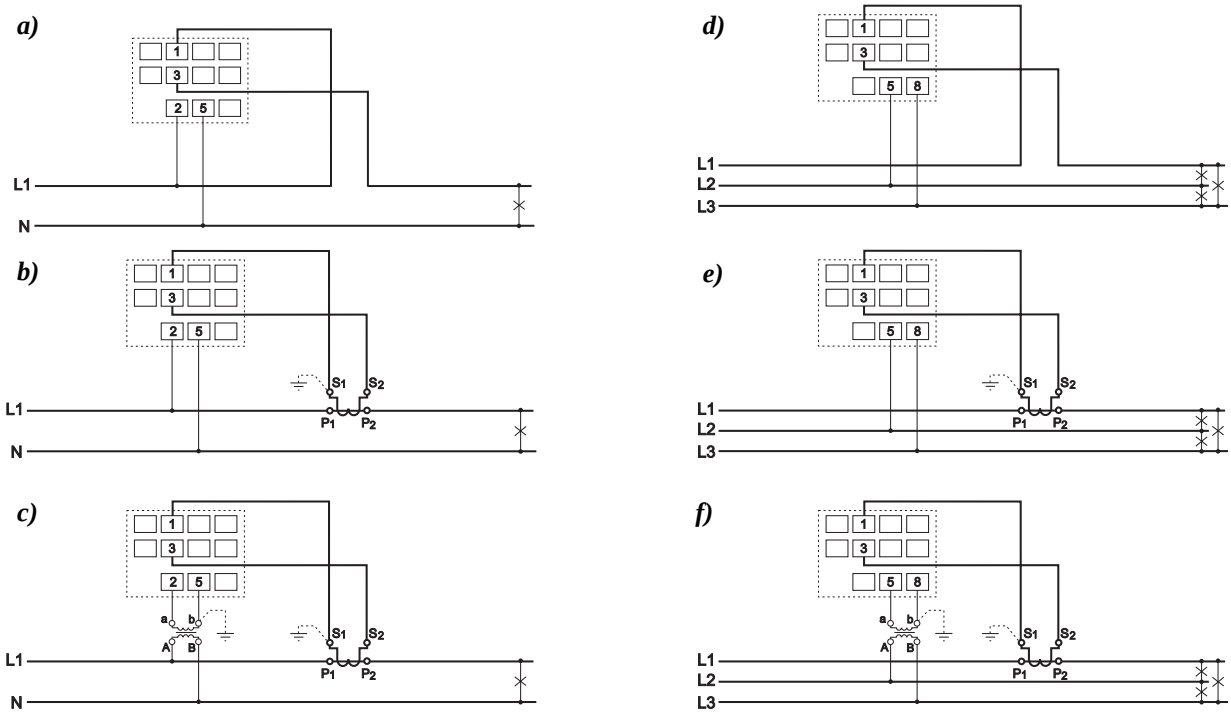
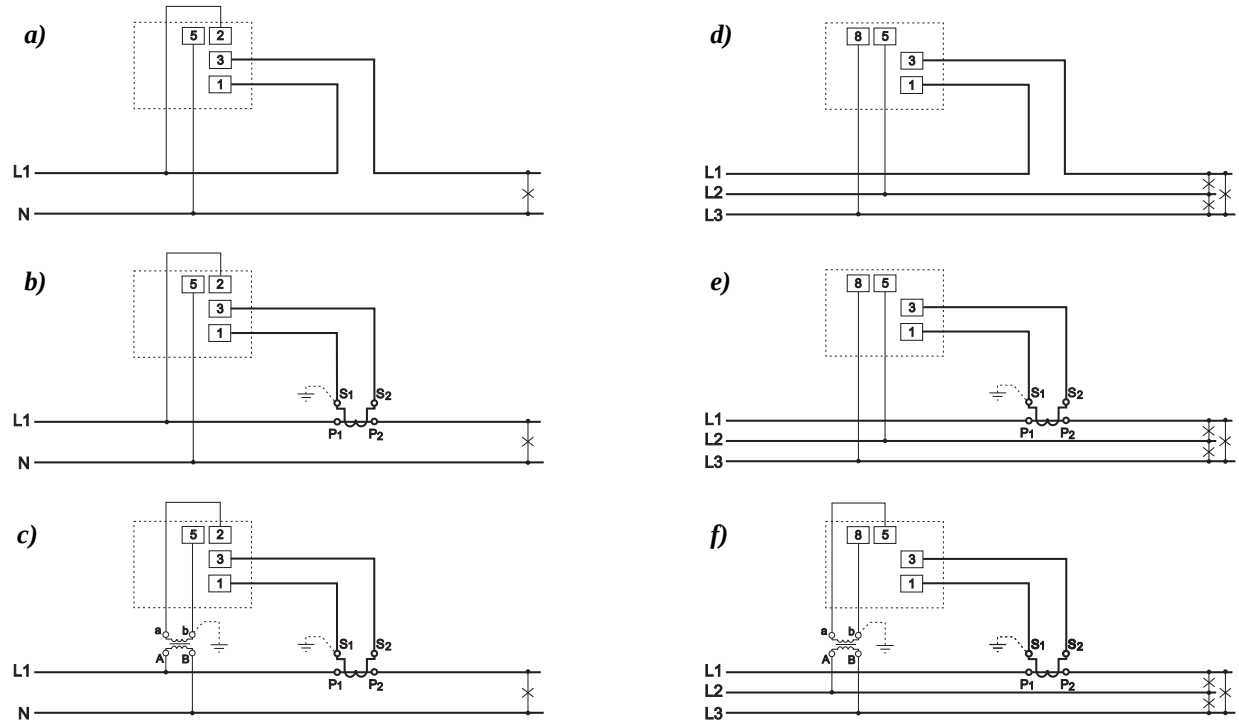
ELECTRICAL CONNECTIONS OF EXTERNAL CIRCUITS

FA39 POWER FACTOR METER



FA32 POWER FACTOR METER



a/ Power factor meter connected directly to a single-phase network.
b/ Power factor meter connected through a current transformer to a single-phase network.
c/ Power factor meter connected through a current and voltage transformers to a single-phase network.
d/ Power factor meter connected directly to a three-phase symmetrically loaded network.
e/ Power factor meter connected through a current transformer to a three-phase symmetrically loaded network.
f/ Power factor meter connected through a current and voltage transformers to a three-phase symmetrically loaded network.

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ORDERING PROCEDURE

POWER FACTOR METERS FA39, FA32	X	X	X	XX	X	XX	X

Measurement of power factor in:
Single phase networks **1**
Three-phase, three-wire symmetrically loaded networks **3**

Measuring range:
0.5 cap ...1 ...0.5 ind ..... **A**
0.8 cap ...1 ...0.2 ind ..... **B**
0.85 cap ...1 ...0.85 ind ..... **C**
0 ind ...1 ..... **D**

Input current:
1 A **1**
5 A **5**

Input voltage:
60V (only for measurement in a single-phase network) **01**
100 V **02**
110 V **03**
230 V **04**
400 V **05**
415 V (only for measurement in a three-phase network) **06**
440 V (only for measurement in a three-phase network) **07**
500 V (only for measurement in a three-phase network) **08**
On request after agreement ..... **XX**

Working position
Write in the code acc. table 1 ..... **X**

Version:
Standard **00**
Custom-made. The code must be agreed with the manufacturer. ..... **XX**

Acceptance tests:
Without additional requirements **0**
With a quality inspection certificate **1**
Other requirements ..... **X**

EXAMPLE OF ORDER

Code: FA39-1-A-5-04-O-00-0, means:
The version of a power factor meter FA39 type, for measurement in a single-phase network, range: 0.5cap ...1 ...0.5ind, input current: 5 A, input voltage: 230 V, working position: c3 (90° - vertical), standard version, without additional test requirements.

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