

# FA39, FA32

## PANEL POWER FACTOR METERS with built-in transducers



### 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...0.3 ind  
0.8 cap ...1...0.8 ind

### 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 -10...23...55°C  
- air relative humidity 25...85%  
- input voltage  $U_n \pm 15\%$   
- input current 20 ...40 ...100 ...120% In  
- frequency of the input voltage 49...51 Hz for 1 phase  
45...65 Hz for 3 phases

- working position acc. order  $\pm 5^\circ$  (table 1)

**Additional errors** acc. EN 60051-1 standard

### Power consumption

- in voltage circuit  $\leq 8$  VA  
- in current circuit  $\leq 0.2$  VA

### Protection Grade acc. to EN60529

- front protection grade:  
- IP52  
- **IP65** only for F39 meters  
- terminal protection: IP20

### Electromagnetic compatibility:

The meter fulfils CE mark requirements:  
- emission acc. EN 61000-6-4 standard  
- immunity acc. EN 61000-6-2 standard

### Safety requirements

- installation category III  
- level of pollution 2  
- maximal working voltage in relation to the earth 660 V

### Housing material

thermoplastic,  
self-extinguishing plastic (UL 94V-O)

### Glass material

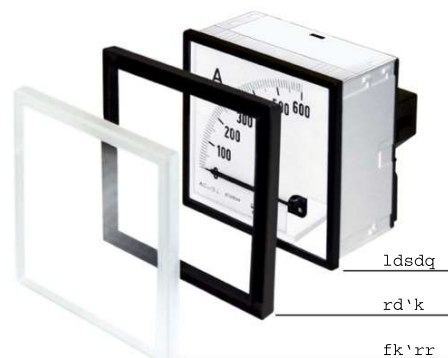
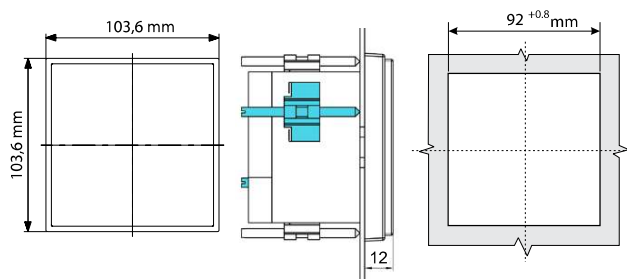
glass (in standard)  
anti-reflective glass on request

### ACCESSORIES

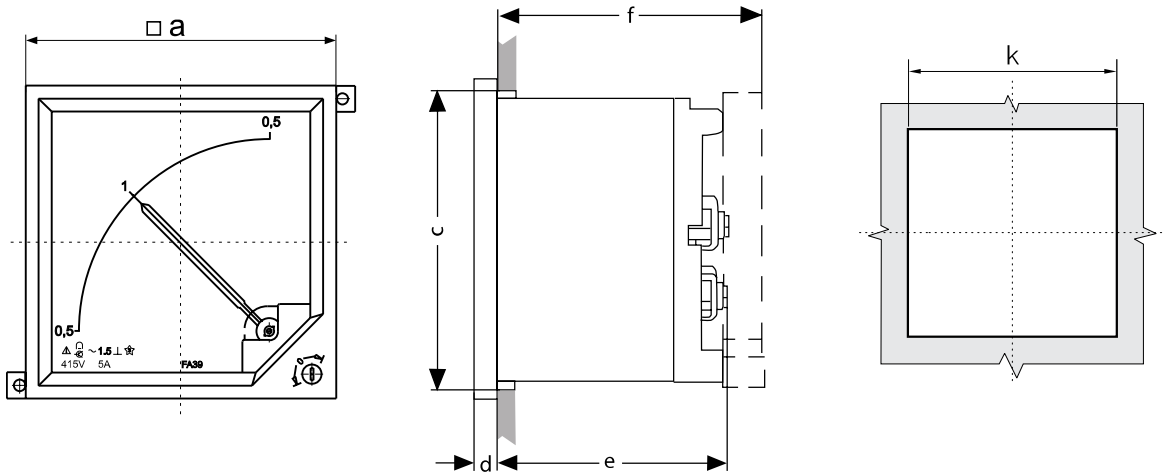
We deliver with the meter:

- screw holders .....2 pcs  
- terminal protection cover.....1 pc  
- user's manual.....1 pc

### EXTERNAL DIMENSIONS OF FA39 FOR IP65 PROTECTION GRADE

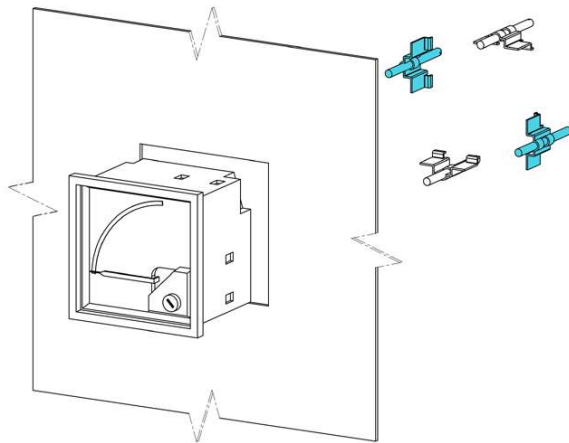


**EXTERNAL DIMENSIONS OF F32 AND FA39 FOR IP52 PROTECTION GRADE**



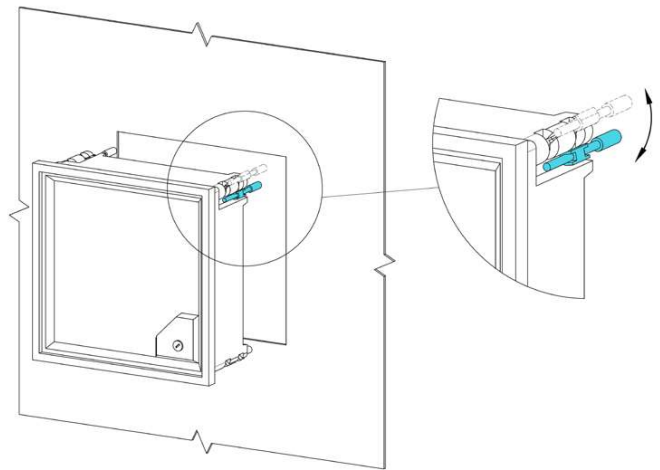
Type	a	c	d	e	f	k
	mm					
FA39	96	92 <sup>+0.8</sup>	5,5	51,5	63,5	92 <sup>+0.8</sup>
FA32	144	138 <sup>+1.0</sup>	5,5	53	63,5	138 <sup>+1.0</sup>

**SPOSÓB MOCOWANIA W TABLICY**



**Fig. 2. Fixing of meters FA39 in the panel (version with IP52)<sup>1</sup>**

<sup>1</sup> Included are two screw holders which should be fixed on arbitrary, opposite case corners



**Fig. 3. Fixing of FA32 meters (version with IP52)<sup>2</sup>**

<sup>2</sup>The meter is fixed to the panel by two screw holders situated on opposite corners of the case.

**WORKING POSITION**

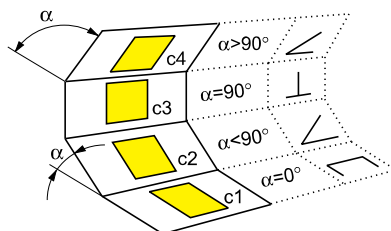
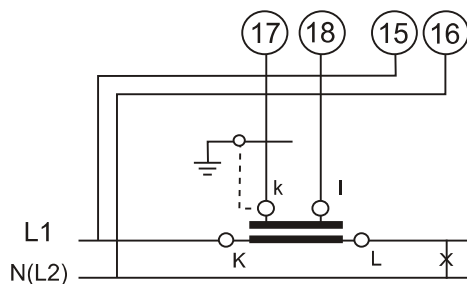


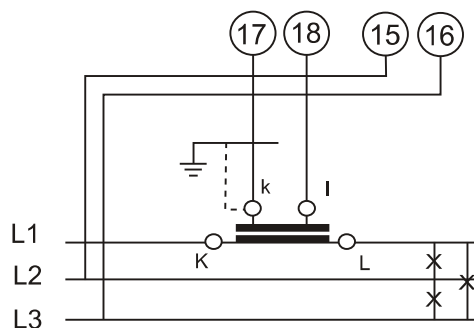
Table 1

Code	Working position
0	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°

**ELECTRICAL CONNECTIONS OF EXTERNAL CIRCUITS**



single phase



three phase wire balanced load

**ORDERING PROCEDURE**

<b>POWER FACTOR METERS FA39, FA32</b>	X	X	X	XX	X	XX	X
<b>Measurement of power factor in:</b>							
Single phase networks.....	1						
Three-phase, three-wire symmetrically loaded networks .....	3						
<b>Measuring range:</b>							
0.5 cap ...1 ...0.5 ind .....	A						
0.8 cap ...1 ...0.3 ind .....	B						
0.8 cap ...1 ...0.8 ind .....	C						
<b>Input current:</b>							
1 A.....	1						
5 A.....	5						
<b>Input voltage:</b>							
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						
<b>Working position</b>							
Write in the code acc. table 1 .....	X						
<b>Version:</b>							
Standard .....	00						
Custom-made. The code must be agreed with the manufacturer.....	XX						
<b>Acceptance tests:</b>							
Without additional requirements .....	8						
With a quality inspection certificate .....	7						
Other requirements.....	X						

**EXAMPLE OF ORDER**

**Code: FA39-1-A-5-04-O-00-8, 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.