

# PTK-UPA20

## DIN 96x96 multifunction multi-measurement meter

- DIN 96x96 compact version
- Main electrical parameters measured and displayed for a cost-effective consumption analysis
- For current transformers (not included)
- Wiring error detection
- Available optional plug-in modules for communication, inputs/outputs
- Active energy class 0,5 S according to IEC 62053-22
- Compliant with IEC 61557-12, the reference standard for PMDs (Performance Metering & monitoring Devices)
- UL listed product - UL no. E231725



### » General features

PTK-UPA20 is a performance metering & monitoring device that provides all of the measurements needed to complete energy efficiency projects and to assure the monitoring of electrical distribution. It is particularly suitable for consumption analysis and control, with an excellent quality/price ratio.

With its large backlit multiple-display screen with 4 hot keys, the instrument is easy to use. Furthermore, it is provided with a correction function for CT wiring errors.

The instrument can be equipped with additional modules that give flexibility throughout the service life of the product. Modules for RS485 communication and additional digital inputs/outputs can be used to increase its range of functionality.

The instrument is compliant with IEC 61557-12, the reference standard for PMDs (Performance Metering & monitoring Devices). It guarantees performance levels and satisfactory performance from the PMDs under the environmental conditions typical of industrial and tertiary applications.

### » Benefits

- User-friendly operation
- Detection of wiring errors
- Flexibility throughout the service life of the product with additional modules
- Compliant with IEC 61557-12
- Active energy class 0,5 S according to IEC 62053-22
- UL listed product

### » Applications

- Industry
- Building
- Infrastructures

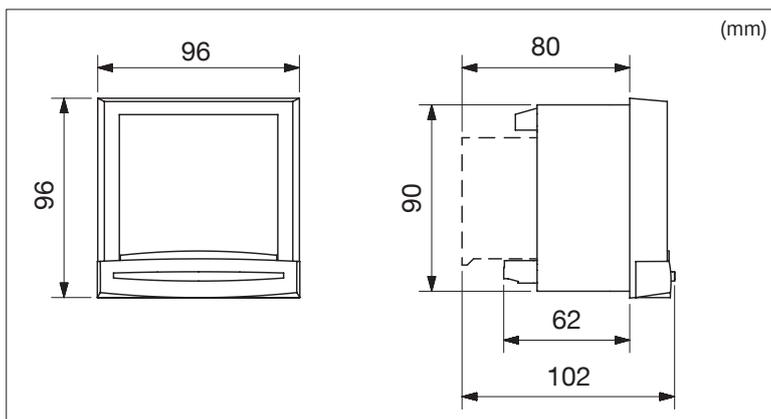
### » Related Products

- 485-MDB-20
- 1DO-20
- 1DO-3DI-20

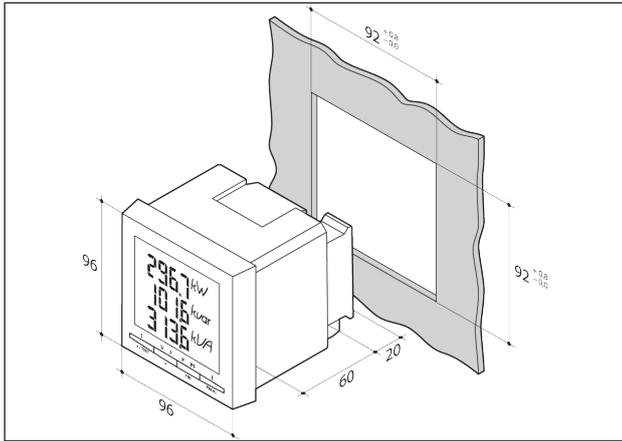
## » Measurements

INSTANTANEOUS VALUES	
VOLTAGE	$V_{L1-N} - V_{L2-N} - V_{L3-N} - V_{L1-L2} - V_{L2-L3} - V_{L3-L1}$ [V]
CURRENT	$I_{L1} - I_{L2} - I_{L3} - I_N$ [A]
ACTIVE POWER	$P_{L1} - P_{L2} - P_{L3} - P_{\Sigma}$ [W]
REACTIVE POWER	$Q_{L1} - Q_{L2} - Q_{L3} - Q_{\Sigma}$ [var]
APPARENT POWER	$S_{L1} - S_{L2} - S_{L3} - S_{\Sigma}$ [VA]
POWER FACTOR	$PF_{L1} - PF_{L2} - PF_{L3} - PF_{\Sigma}$
VOLTAGE THD	$THDV_{L1} - THDV_{L2} - THDV_{L3} - THDV_{L1+L2} - THDV_{L2+L3} - THDV_{L3+L1}$ [V]
CURRENT THD	$THDA_{L1} - THDA_{L2} - THDA_{L3}$ [A]
FREQUENCY	$f$ [Hz]
MAX AVERAGE VALUES (MAX AVG)	
MAX AVG CURRENT	$I_{L1MAXAVG} - I_{L2MAXAVG} - I_{L3MAXAVG} - I_{NMAXAVG}$ [A]
MAX AVG ACTIVE POWER	$P_{\Sigma MAXAVG}$ [W]
MAX AVG REACTIVE POWER	$Q_{\Sigma MAXAVG}$ [var]
MAX AVG APPARENT POWER	$S_{\Sigma MAXAVG}$ [VA]
COUNTERS	
ACTIVE ENERGY	+/- kWh
REACTIVE ENERGY	+/- kvarh
TIMETABLE	

## » Technical drawing



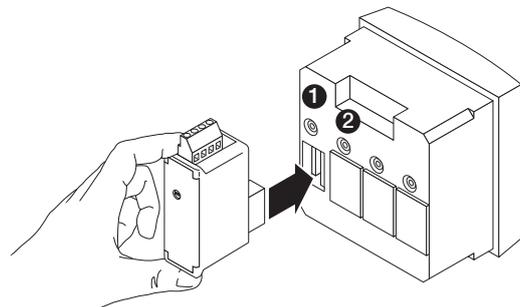
» Case



Type	Panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD display
Type of terminal strips	Fixed or detachable
Section of connection for voltages and other terminals	0.2 ... 2.5 mm <sup>2</sup>
Section of connection for currents	0.5 ... 6 mm <sup>2</sup>
Weight	400 g

» Plug-in modules to be combined to PTK-UPA20

Available plug-in modules	Description
485-MDB-20	RS485 communication with MODBUS protocol (speed up to 38400 baud)
1DO-20	1 digital output which can be allocated to: <ul style="list-style-type: none"> <li>pulses: configurable (type, weight, duration) to kWh or kvarh</li> <li>monitoring: <math>I_{L1}, I_{L2}, I_{L3}, I_N, V_{L1-N}, V_{L2-N}, V_{L3-N}, V_{L1-L2}, V_{L2-L3}, V_{L3-L1}, f, P_2, Q_2, S_2, PF_2, THDA_{L1}, THDA_{L2}, THDA_{L3}, THDV_{L1}, THDV_{L2}, THDV_{L3}, THDV_{L1-L2}, THDV_{L2-L3}, THDV_{L3-L1}</math> time counter</li> <li>equipment control</li> </ul>
1DO-3DI-20	3 digital inputs for information report from an external contact and 1 digital output which can be allocated to: <ul style="list-style-type: none"> <li>pulses: configurable (type, weight, duration) to kWh or kvarh</li> <li>monitoring: <math>I_{L1}, I_{L2}, I_{L3}, I_N, V_{L1-N}, V_{L2-N}, V_{L3-N}, V_{L1-L2}, V_{L2-L3}, V_{L3-L1}, f, P_2, Q_2, S_2, PF_2, THDA_{L1}, THDA_{L2}, THDA_{L3}, THDV_{L1}, THDV_{L2}, THDV_{L3}, THDV_{L1-L2}, THDV_{L2-L3}, THDV_{L3-L1}</math> time counter</li> <li>equipment control</li> </ul>



Module name	Max module number	1	2
485-MDB-20	1	x	x
1DO-20	2	x	x
1DO-3DI-20	2	x	x

## » Specifications

## PTK-UPA20

<b>Current measurements (TRMS)</b>	
Via CT primary	9,999 A
Via CT secondary	5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2%
Permanent overload	6 A
Intermittent overload	10 In over 1 s
<b>Voltage measurements (TRMS)</b>	
Direct measurement between phases	50 ... 500 VAC
Direct measurement between phase and neutral	28 ... 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2%
<b>Power measurement</b>	
Measurement updating period	1 s
Accuracy	0.5%
<b>Power factor measurement</b>	
Measurement updating period	1 s
Accuracy	0.5%
<b>Frequency measurement</b>	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1%
<b>Energy accuracy</b>	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
<b>Auxiliary power supply</b>	
Alternative voltage	110 ... 400 VAC
AC tolerance	± 10 %
DC voltage	120 ... 289 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Power consumption	10 VA
<b>Operating conditions</b>	
Operating temperature range	-10 ... +55°C
Storage temperature	-20 ... +85°C
Relative humidity	95%

## Optional plug-in modules

<b>Module 1output or 1output/3inputs: pulse or alarm output</b>	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of manoeuvres	≤ 10 <sup>8</sup>
<b>Module 1output/3inputs: inputs</b>	
Number	3
Power supply	10 ... 30 VDC
Minimum width of signal	10 ms
Minimum length between 2 pulses	18 ms
Type	Optical couplers
<b>MODBUS communication module</b>	
Link	RS485
Type	2 to 3 half duplex wires
Protocol	MODBUS® RTU
MODBUS® speed	1400 to 38400 baud

ORDER CODE	MODEL	POWER SUPPLY	CERTIFICATION
	Name	Auxiliary	UL
<b>PTK-UPA20</b>			
1213.0001.0001	UPA20	110...400VAC/120...350VDC	●

ORDER CODE	MODEL	TYPE	CERTIFICATION
	Name	Description	UL
<b>PLUG-IN MODULES FOR PTK-UPA20</b>			
1216.0001.0001	485-MDB-20	RS485 Modbus communication	●
1216.0002.0001	1DO-20	1 digital output configurable for pulses/alarms	●
1216.0003.0001	1DO-3DI-20	1 digital output configurable for pulses/alarms, 3 digital inputs	

<b>ACCESSORIES FOR PTK-UPA20</b>			
7502.0006.0001	ADAPT96_144	Integration kit to adapt 144mm cutout to 96mm instrument	

NOTE: Subject to change without notice



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