



## 1. DESCRIPTION

The multiple input monitor MEG74 is designed for long-term operation in both newly built and already operating low-voltage level stations or cabinets. It is characterized by variability and expandability during operation and cost reduction in operation and maintenance. This is enabled by automatically detected current sensors and uniformly calibrated current inputs of the monitor according to the EN IEC 61869-10 standard. The result is a widely applicable measuring instrument with accuracies meeting operational requirements, characterized by robustness, connector interchangeability, and long-term stability. It is oriented towards secure remote transmission, which can be integrated into SCADA control systems, electrical energy measurement systems, and voltage quality assessment systems. The measured data can be used for analysis and optimization of low-voltage networks including loads. Its design respects the safety requirements of surge protection category and measurement category CATIV/300 V. Depending on the type, the current sensors allow easy installation directly on low-voltage terminals or indirectly into current circuits of already installed current transformers. Installation is carried out by workers with standard qualifications, optionally with remote supervision of specialists.

The MEG74 monitor is designed for unattended measurements with secure remote communication ensuring the transmission of measured data, measurement parameterization, and updating of measurement functions. Therefore, it minimizes elements for local operation, for which a USB interface, RUN indication for proper monitor operation, and a SIM card slot are provided.

The multiple input monitor MEG74 is designed for permanent installation into low-voltage networks. It measures three-phase voltages and twelve three-phase currents. It has an ETH interface and an optional GSM module with secure remote communication via the LINUX system can be ordered. For precise time synchronization with a resolution of 1 ms, a GPS module can also be supplied. It has three-phase secured power supply from measured voltages, allowing remote information transmission for up to 30 s after power supply interruption. It is designed for installation on a horizontally placed DIN rail. In this position, it is resistant to dripping water with an inclination of up to 15°, IP22.

The MEg74 monitor simultaneously measures ten-period values for all quantities, from which it evaluates average and maximum values for currents and minimum values for voltages for the selected recording interval, which are stored in memory. At the specified time intervals, it records phase active and reactive powers into memory. For selected recording intervals, it evaluates and records active and reactive inductive and capacitive energies. It distinguishes the direction of power flow for powers and energies. It also registers overcurrents including their wavefoAC with AC1/2 values.

In the first current input, which is also intended for measuring on the low-voltage side of the transformer, the MEg74 multiple input monitor additionally evaluates the quality of voltage and currents according to EN 50160, ed. 4 using methods from the EN 61000-4-30, ed. 3 standard. It records all quality parameters, including their wavefoAC, into memory. It registers voltage events and events on currents, recording their time wavefoAC using AC1/2 values and oscillograms for a defined period before and after the occurrence of the event. Thus, the MEg74 monitor can replace the measurement of the low-voltage side of the transformer, source, or power supply with a separate PQ monitor.

## **2. TECHNICAL PARAMETERS**

### **General information**

The multiple input monitor MEg74 is classified as PQI-S-FI1-H according to EN 62586-1.

The development of the monitor is in accordance with the standards ČSN ISO 9001, ČSN ISO 14001:2005, ČSN OHSAS 18001:2008, ČSN ISO/IEC 27001:2014.

### **Working Conditions**

Operating Temperature:	-20 °C to +55 °C
Stabilization Time:	10 minutes after power-on
Relative Humidity:	10 % to 95 %, non-condensing
Altitude:	up to 2000 m

### **Design Specifications**

Dimensions:	240 x 80 x 80 mm
Weight:	0,75 kg
Measurement Category:	CATIV 300 V according to EN 61010-2-030:2011

Safety Class:	II, reinforced insulation
Protection:	IP22
Application:	indoor
Pollution Degree:	2

#### Power Supply

#### Inputs

Phase Voltage Range:	160 V <sub>AC</sub> to 300 V <sub>AC</sub>
Power Consumption:	18 VA
Frequency:	50 Hz ± 15%
Internal Secured Power Supply for Measurement and Communication:	30 s with charged supercapacitors, charging time 5 min

#### Protection

Un=160 V<sub>AC</sub> to 300 V<sub>AC</sub>, inputs: 3 pcs cylindrical fuse 10x 38gG 1.0A, fuse switch OPVP-3

#### Measurement Characteristics

A/D Converter:	16 bit
Sampling Frequency:	128 samples per cycle
Antialiasing Filter:	digital FIR type filter
Phase Lock Loop:	controlled by the passage of the fundamental voltage U <sub>1</sub> through zero
Aggregation Intervals:	quality function - according to standard EN 61000-4-30, ed. 3 recorder function - from 1 s to 1/4 hour
Aggregation Synchronization:	according to standard EN 61000-4-30, ed. 3, Class A
Time Base:	±1 s over 24 hours at operating temperature without external synchronization, ±1 ms at operating temperature and GPS function ETH interface can be used for time synchronization
Data Memory Capacity:	512 MB, circular organization for individual functions

#### Voltage Inputs U<sub>1</sub>, U<sub>2</sub>, and U<sub>3</sub>

Rated Phase Voltage U <sub>n</sub> , P-N:	230 V <sub>AC</sub>
Rated Composite Voltage U <sub>n</sub> , P-P:	400 V <sub>AC</sub>
Maximum Voltage, P-N:	300 V <sub>AC</sub> for CATIV

Voltage Measurement Range, P-N, class S:	0.2 V <sub>AC</sub> to 350 V <sub>AC</sub>
Voltage Measurement Uncertainty, P-N, class S:	±0.2 % U <sub>n</sub> ±0.3 % M.H. f=50 Hz
Temperature Coefficient:	0.05 % U <sub>n</sub> / 10 K
Input Resistance of Voltage Inputs:	3.36 MΩ

Voltage inputs with common neutral conductor are separated by high resistance

### Current Input A/TR

Rated Voltage U<sub>n</sub> at the current input according to EN IEC 61869-10 corresponds to the rated current I<sub>n</sub> at the current sensor input

Current Measurement Range:	5 % U <sub>n</sub> to 200 % U <sub>n</sub>
Current Measurement Uncertainty:	1.0 % U <sub>n</sub> , (45 Hz to 60 Hz)
Temperature Coefficient:	0.05 % U <sub>n</sub> / 10 K
Continuous Overload:	10 x U <sub>n</sub>
Maximum Current, 1s:	50 x U <sub>n</sub> , once per 1 minute

### Current Inputs B to L

Current Measurement Range:	5 % U <sub>n</sub> to 200 % U <sub>n</sub>
Current Measurement Uncertainty:	1.0 % U <sub>n</sub> , (45 Hz to 60 Hz)
Temperature Coefficient:	0.05 % U <sub>n</sub> / 10 K
Continuous Overload:	10 x U <sub>n</sub>
Maximum Current, 1 s:	50 x U <sub>n</sub> , once per 1 minute

The connectors of current inputs A/TR to L are uniquely modified RJ45 type WS 8-8.

### Active Power, Reactive Power, Power Factor, Energy

Active Power:	1.0 % P <sub>n</sub>	at U ≥ 80% U <sub>n</sub> , I ≥ 10 % I <sub>n</sub> , PF ≥ 0.5
Reactive Power:	1.0 % Q <sub>n</sub>	at U ≥ 80% U <sub>n</sub> , I ≥ 10 % I <sub>n</sub> , PF ≤ 0.866
Power Factor:	±0.01	at U ≥ 80% U <sub>n</sub> , I ≥ 10 % I <sub>n</sub>
Active Energy:	class B	according to ČSN EN 50470-1
Reactive Energy:	class 1	according to TPM 2440-08, ČMI 2008

### USB Interface

Type:	USB2.0
Communication Speed:	5.4 Mbit/s



## The parameters of the multiple input monitor MEG74

[www.e-mega.cz](http://www.e-mega.cz) / [mega@e-mega.cz](mailto:mega@e-mega.cz) /

Connector: USB mini B

### ETH Communication

Speed: 10/100Mbps  
Ethernet Standard: Ethernet version 2.0/IEEE 802.3  
Data Reading Protocols: MODBUS TCP, IEC 60870-5-104

VPN Protocols: L2TP/IPsec, IKEv2 /IPsec  
Additional Features: Firewall, static routing  
Connector: RJ45 type WS 8-8

### GSM Communication, optional when ordering

SIM Card Type: nano SIM in socket 115 S-AC1, accessible  
Technology: LTE Cat. 4, HSPA+, EDGE, GPRS (class B, CS1 to CS4)  
Frequency Bands [MHz]:  
4G: B1 (2100), B3 (1800), B7 (2600), B8 (900), B20 (800)  
3G: B1 (2100), B8 (900)  
2G: B3 (1800), B8 (900)

Watchdog for modem restart in case of communication loss

Protocols and other features same as ETH communication

### ETH Time Synchronization

Protocols: NTP, PTP (software only), IEC 60870-5-104, MODBUS TCP GPS

### Time Synchronization, optional

Uncertainty:  $\pm 1$  ms  
Standards: NMEA, RTCM104  
Frequency Band: GPS(L1)

**Table of measured quantities of the PQ function of the multi-input monitor MEG74 at input A/TR according to IEC 61000-4-30, ed.3**

Function and Measured Data	Measurement Method	Uncertainty, Measuring Range
Grid Frequency; 10s data	cl. A	cl. S
Voltage value; 150 periods, 10 min, 2 hours	cl. A	cl. S
Flicker, 10 min $P_{stv}$ , 2 hours $P_{lt}$	cl. A	cl. S
Dips and Swells of voltage; residual and max. U, duration T	cl. A	cl. S
Interruption of supply voltage, residual U, duration T	cl. A	cl. S
Voltage unbalance; 150 periods, 10 min, 2 hours	cl. A	cl. S
Harmonic Voltages; 150 periods, 10 min, 2 hours	cl. A	cl. S
Interharmonic Voltages 150 periods, 10 min, 2 hours	cl. A	cl. S
Voltage of signals in Supply Voltage Measured Voltage data	cl. A	cl. S
Positive and Negative Voltage Deviations, 150 periods, 10min, 2h	cl. A	cl. S
Rapid Voltage Changes (RVC), $U_{AC1/2}$	cl. A	cl. S

Note: According to EN 61557-12, the multi-input monitor MEG74 is classified as a PMD SD (Performance Measuring and Monitoring Device) with current measurement using sensors and direct voltage measurement. It combines functions of recording, electrical energy measurement, voltage quality measurement, HDO telegram recording, and analysis of measured currents.

**Measurement uncertainties and measurement ranges of the PQ function variables of the multi-input monitor MEG74 at input A/TR under test conditions 1, 2, and 3 according to standard EN 61000-4-30, ed. 3**

Parameter	Measurement uncertainty	Measuring Range
Frequency	$\pm 2$ mHz	42,5 Hz - 57,5 Hz
Voltage deviation	$\pm 0,2\% U_n$	$10\% U_n - 120\% U_n$
Flicker $P_{stv}$ , $P_{lt}$	$\pm 7,5\% P_{stv}$ , $P_{lt}$ , IEC 61000-4-15, ed. 2	$P_{stv}$ , $P_{lt}$ (0,4-4,0), 1-4000 changes/min
Flicker $P_{inst,max}$	$8\% P_{inst,max}$	$P_{inst,max}$ (0-4), sine, rectangular
Voltage phenomena	Amplitude: $\pm 0,5\% U_n$ , Duration: $\pm 1$ period	$5\% U_n - 150\% U_n$ , $0,02\text{ s} - 1,0\text{ s}^1$
Interruption	Duration: $\pm 1$ period	$0,02\text{ s} - 1,0\text{ s}$
Unbalance	$\pm 0,2\%$	$1,0\% u_2 - 5\% u_2$ , $1,0\% u_0 - 5\% u_0$
Harmonic voltage	$\pm 5\% U_{harm}$ , $U_{harm} \geq 3\% U_n$ $\pm 0,15\% U_n$ , $U_{harm} < 3\% U_n$	$10\% - 100\%$ cl. 3 IEC 61000-2-4
Interharmonic voltages	$\pm 5\% U_{harm}$ , $U_{harm} \geq 3\% U_n$ $\pm 0,15\% U_n$ , $U_{harm} < 3\% U_n$	$10\% - 100\%$ cl. 3 IEC 61000-2-4
Signals in voltage	$\pm 10\% U_{sig}$ for $3\% U_n \leq U_{sig} \leq 15\% U_n$ , $\pm 0,3\% U_n$ for $1\% U_n \leq U_{sig} \leq 3\% U_n$	$0\% U_n - 15\% U_n$
Rapid changes of U - RVC, $U_{AC1/2}$	Amplitude: $\pm 0,5\% U_n$ Duration: $\pm 1$ period	Threshold $1,0 - 10\% U_n$ Hysteresis $50\%$ threshold
Current	$\pm 2\% I_{measured}$	$10\% - 200\% I_{max}$
Time base	$\pm 1\text{ s}$ za 24hour, 10 ms for GPS	-

overview of evaluated variables in the recorder function of the multiple input monitor MEG74

Quantity	Mark	For every phase	For three-phase output	Average/sum for interval <sup>1)</sup>	200 ms minimum in interval	200 ms maximum in interval
Effective voltage	$U_{ef}$	F		F	F	F
Voltage harmonics – 1st to 50th harmonic	$U_{1,h}$ to $U_{50,h}$	F		F		
Overall harmonic distortion of voltage	$THD_U$	F		F		
Effective current	$I_{ef}$	F		F		F
Current harmonics – 1st to 50th harmonic	$I_{1,h}$ to $I_{50,h}$	F		F		
Overall harmonic distortion of current	$THD_I$	F		F		
Displacement power factor	$\cos \varphi$	F	F	F		
Power Factor	PF	F	F	F		
Active power	P	F	F	F		
Reactive power	Q	F	F	F		
Apparent power	S	F	F	F		
Deformation power	D	F	F	F		
Unbalance power	N		F	F		
Active power (1st harmonic)	$P_{1,h}$	F	F	F		
Reactive power (1st harmonic)	$Q_{1,h}$	F	F	F		
Apparent power (1st harmonic)	$S_{1,h}$	F	F	F		
Unbalance power (1st harmonic)	$N_{1,h}$		F	F		
Active energy – consumption	EP+	F	F	F		
Active energy – supply	EP-	F	F	F		
Reactive inductive energy during active consumption	EQL/EP+	F	F	F		
Reactive capacitive energy during active consumption	EQC/EP+	F	F	F		
Reactive inductive energy during active supply	EQL/EP-	F	F	F		
Reactive capacitive energy during active supply	EQC/EP-	F	F	F		
Active energy – consumption (1st harm)	EP+ <sub>1,h</sub>	F	F	F		
Active energy – supply (1st harm)	EP- <sub>1,h</sub>	F	F	F		
Reactive inductive energy during active consumption (1st harm)	EQL/EP+ <sub>1,h</sub>	F	F	F		
Reactive capacitive energy during active consumption (1st harm)	EQC/EP+ <sub>1,h</sub>	F	F	F		
Reactive inductive energy during active supply (1st harm)	EQL/EP- <sub>1,h</sub>	F	F	F		
Reactive capacitive energy during active supply (1st harm)	EQC/EP- <sub>1,h</sub>	F	F	F		

<sup>1)</sup> The recording interval is adjustable from 1 second to 15 minutes. For energies, it is the cumulative value for the interval, for other variables, it is the average value for the interval.

F Evaluated values during the measurement of phase voltages

### 3 TECHNICAL PARAMETERS OF CURRENT SENSORS

#### 3.1 A trio of flexible sensors 3AMOSm/74

A trio of flexible sensors 3AMOSm/74 has an interface that allows their connection to any current input of the MEg74 monitor.

Rated alternating current $I_n$ 3AMOSm/74:	300 A
Rated load:	2 M $\Omega$ /50 pF
Current measurement range:	10 % $I_n$ až 120 % $I_n$
Current measurement uncertainty	$\pm 2,0$ % $I_n$ (45 Hz až 60 Hz)
Change with position	$\pm 0,5$ % $I_n$
Change due to external fields	$\pm 0,5$ % $I_n$ (external current field 0,3 $I_n$ /50 Hz, distance 35 mm from the closure)
Operating temperature	- 20 °C až + 55 °C
Temperature coefficient	0,2 % $I_n$ /10 K
Relative humidity:	$\leq 95$ % RH
IP rating:	IP65
Measurement category:	CATIV/300 V
Safety category:	II
Loop length:	15 cm
Coil diameter:	8 mm
Diameter of the cap section:	10 mm
Allowed bending radius of the coil:	$\geq 20$ mm
Length of sensor cable <sup>1)</sup> :	0,3 m to branching, 1m from the branching to the RJ45 connector

<sup>1)</sup> The output cable can be extended up to a length of 5 m with a standard extension cable. Waterproofness and safety of the extension must be ensured appropriately if necessary.

Illustrative photograph of the sensing part of the flexible sensor 3AMOSm/74, loop length 15 cm



### 3.2 Trio of split-core current transformers 3LCT/74

	3LCT16/74	3LCT24/74	3LCT36/74
Dimensions of the window [mm]	16x16	24x24	36x36
Dimensions of the sensing part, L x W x H [mm]	46x32x42	67x47x42	82x62x46
Weight [kg]	0,3	0,5	0,85
Rated primary current $I_n$ :	200 A	400 A	500 A
Rated output voltage $U_n$ :	225 mV <sub>ac</sub> , (EN IEC 61869-10)		
Rated load:	2 M $\Omega$ /50 pF		
Length of output cable <sup>1)</sup> :	0,3m to branching, 1m to connectorRJ45		
Accuracy class:	2 according to ČSN EN 61869-2:		
Rated frequency:	50 Hz		
Frequency range:	33 Hz to 1 kHz		
Operating temperature range:	-20 °C to +50 °C		
Storage temperature:	-30 °C to +50 °C		
Relative humidity:	≤ 85 % RH, non-condensing		
Operating position:	arbitrary		
Altitude:	do 2000 m		
Rated phase voltage:	230 V		
Maximum phase voltage:	300 V		
Measurement category:	CAT II/300 V		
Binding tapes:	WT-200MC, length 203 mm, width 2.5 mm		

<sup>1)</sup> The output cable can be extended up to 5 m using standard extension cable. Waterproofing and safety of extension should be ensured if needed.  
3M22 SCOTCH insulation tape for installation on LV conductors and in their vicinity increases installation safety.

Illustrative photograph of the sensing parts of split-core current transformers 3LCT16/74, 3LCT24/74, and 3LCT36/74



### 3.3 A trio of toroids 3TORv/74

Rated input current $I_n$ :	50 A
Dimensions:	40x15x55(80) mm
Max. diameter of measured conductor:	15 mm
Weight:	0,75 kg
Rated output voltage $U_n$ :	225 mV
Rated load:	2 M $\Omega$ /50 pF
Length of output cable <sup>1)</sup> :	0,3 m to the branch, 1 m rom the branch to RJ45 connector
Measurement range	10 % to 120 % $I_n$
Rated frequency:	50 Hz
Frequency range:	42,5 Hz to 69 Hz
Measurement error at $f=50\text{Hz}$ <sup>2)</sup>	1,0 % $I_n$
Measurement category:	CAT IV/300 V
Safety class:	II
Ingress protection:	IP40
Operating temperature:	-10 °C to +55 °C
Temperature coefficient:	0,2 %/10 K
Relative humidity:	$\leq$ 85 % RH, without condensation

<sup>1)</sup> The output cable can be extended up to a length of 5 m with a standard extension cable. If necessary, ensure waterproofing and safety of the extension appropriately.

<sup>2)</sup> In the range of 10 %  $I_n$  to 120 %  $I_n$

<sup>3)</sup> Up to the order of 25, maximum crest factor 2

<sup>4)</sup> Class 1 according to ČSN EN 61000-4-7, ed.2

Illustrative photograph of the sensing part of toroid 3TORv/74



### 3.4 Current-to-voltage converter 1 A/5 A to standard voltage 225 mV

Input current $I_n$ :	1 A/ 5 A
Input voltage $U_n$ :	225 mV
Rated secondary voltage $U_n$ :	225 mV <sub>AC</sub> (ČSN EN IEC 61869-10)
Rated load:	2 MΩ/50 pF
Output cable length <sup>4)</sup> :	1 m

### 3.5 Current transformer with split core MTPD.51<sup>1)</sup>

Rated primary current $I_n$ <sup>2)</sup> :	400 A, 600 A, 1000 A
Rated frequency:	50 Hz
Rated secondary current $I_n$ :	1 A
Frequency range:	42,5 Hz to 69 Hz <sup>3)</sup>
Accuracy class:	0,5 according to ČSN EN 61869-2
FS safety factor:	5
Rated short-time thermal current $I_{th}$ :	10 x $I_n$
Rated dynamic current $I_{dyn}$ :	2,5 x $I_{th}$
Operating temperature range:	-25 °C to +60 °C
Temperature range with non-destructive effects:	-40 °C to +70 °C
Insulation temperature class:	+ 120 °C
Max. conductor temperature with measured current:	+120 °C
Average relative humidity:	≤ 90 % RH, non-condensing
Ingress protection:	IP20
Impact:	IK08
Pollution degree:	2
Altitude:	up to 2000 m
Rated phase voltage of measured conductor:	230 V <sub>AC</sub>
Maximum phase voltage of measured conductor:	300 V <sub>AC</sub>
Measuring category:	CATIV/300 V
Impulse withstand voltage:	6 kV
Testing voltage:	5,4 kV/ 5 s
Safety class:	II
Weight:	0,5 kg
Outer dimensions:	100 x 95x 29 mm

Dimensions of transformer window: 52 x 33 mm  
 Screw clamp, wire cross-section: WT-200MC, length 203 mm, width 2,5mm

- 1) Technical data apply under reference conditions: T ambient = 20°C, humidity 40 to 60% RH
- 2) Only one value
- 3) Do not use for currents with a rated frequency value outside the specified frequency range

Note: Due to mechanical robustness and high temperature, installation is only possible in inaccessible areas.

Illustrative photographs of the sensing part of the MTPD.51/74 transformer and its mounting brackets.



### 3.6 Technical data of the MEGML measuring rail

#### Frequency

Rated frequency: 50 Hz  
 Frequency range: 40 Hz to 60 Hz

#### Current sensors

Rated primary current  $I_n^{1)}$ : 250 A<sub>AC</sub>, 400 A<sub>AC</sub>, 630 A<sub>AC</sub>  
 Rated secondary current  $I_n$ : 1 A<sub>AC</sub>  
 Output cable length: 1,5 m ± 5 cm  
 Measuring range: 5 % až 120 %  $I_{n\ prim}$   
 Rated frequency: 50 Hz  
 Frequency range: 42,5 Hz až 69 Hz  
 Overcurrent number: 5 (250 A<sub>AC</sub>), 3 (400 A<sub>AC</sub>), 2 (630 A<sub>AC</sub>)  
 Rated short-term (thermal) current: 20 kA for 1 s  
 Maximum voltage between current inputs: 520 V<sub>AC</sub>  
 Voltage drop at the connection of the measuring rail <sup>3)</sup>  
     at  $I_{nom} = 640$  A <10 mV  
     at  $I_{max} = 6400$  A <100 mV

#### Voltage inputs <sup>4)</sup>

Rated input voltage $U_{n\text{in}}$	230 V <sub>AC</sub>
Input resistance of voltage inputs	2,2 MΩ
Maximum input phase voltage <sup>5)</sup>	300 V <sub>AC</sub>
Rated output voltage $U_{n\text{out}}$	225 mV <sub>AC</sub> , (ČSN EN IEC 61869-10)
Output cable length <sup>2)</sup> :	1,5 m ± 5 cm
Rated load:	2 MΩ/50 pF
Accuracy of output voltage	0,2 % M.V + 0,3 % $U_n$

#### Dimensions

	495,5 x 80,4 x 25.5 mm
Centre-to-centre distance of holes	185 mm
Fastening screws of connection:	M12×60 6HR, flat washer 12 and spring washer
Specified tightening moment of attaching screws	28 Nm
Wire cross-section of current measuring circuits:	1.5 mm <sup>2</sup> , conductors installed in WST-2 tube, diameter 9,5 mm.
Wire cross-section of voltage measuring circuits:	0.5 mm <sup>2</sup> , conductors installed in WST-2 tube, diameter 12,7 mm.

#### Operating conditions

Temperature range	-20 °C to +60 °C
Maximum humidity	95 % R.H. without long-term condensation
Measuring category	CAT IV/300 V
IP rating	IP 00
Altitude	up to 2000 m
Intended for indoor use	

#### Notes:

- 1) Only one of the values
- 2) The output cable can be extended up to a length of 5 meters using a standard extension cable. Waterproofing and safety of the extension must be ensured if needed.
- 3) When tightening the securing screws of the fuse rail to the prescribed torque
- 4) Applies to input voltage terminals as well as lead voltages
- 5) For CAT IV; for CAT III, it is 600 V  
M.V. = measured value

Rough photo of the measuring rail MEgML73.



### 3.6 Technical parameters of GSM and GPS antennas of the multi-input monitor MEg74

Antennas	AO-AKOM-36SS/MEgA	AO-ALTE-G214S/MEgA	AP-AGPS-36/MEgA	AP-A20C-M5RA/MEgA
Use	GSM/UMTS/LTE/GPS	GSM/UMTS/LTE	GPS	GPS
Frequency bands MHz	800/900/1700/1800/1900/2100/2600/2700/1757,4	700/800/900/1700/1800/1900/2100/2600	1575,42	1575,24
Gain	0/30 dBi	6 dBi	30 dBi	32 dBi
VSWR	<2.0:1	<3.0:1	<2.0:1	<2.0:1
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
Direction	omnidirectional	omnidirectional	omnidirectional	omnidirectional
HPBW	H360° V30°	H360° V30°	H360° V30°	H360° V30°
Polarisation	linear/R.H.C.P.	vertical	R.H.C.P.	R.H.C.P.
Max. out. power	10 W	10 W	10 w	10 W
Supply voltage	2,7-5,5 VDC	-	2,7-5,0 V	2,5-5,5 V
Dimensions	∅ 54,4 x 24,6 mm	315 x ∅ 29,5 mm	∅ 54,7 x 23 mm	38,5x34,5x12,3 mm
Weight	165 g	55,99 g	190 g	88,38 g
Operating temp.	-30 to +90 °C	-40 to +85 °C	-30 to +90 °C	-40 to +90 °C
Design	PUCK	Whip	PUCK	External
Mounting method	installation	magnetic	installation	magnetic
Cable type	2 x RG174/U	R174/U	R174/U	R174/U
Cable length	2 x 3 m	3 m	10 m	5 m
Connector type	MMCX(m)/MMCX(m)	MMCX(m)	MMCX(m)	MMCX(m)
Overvoltage	CAT IV 2,5 m	CAT IV	CAT IV 2,5 m	CAT IV 2,5 m
Safety cl.	II 2,5 m	II 2,5 m	II 2,5 m	II

#### Manufacturer

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#### Date

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