EMM

MULTIFUNCTION MULTIMETERS
FLUSH MOUNTING **DIN 96 x 96**

ENVIRONMENTAL WORKING CHARACTERISTICS
Working T: -5 ÷ +50°C
Storage T: -15 ÷ +60°C
Humidity: ≤90%

STANDARDS/ REGULATION
Safety: 61010-1:2001
EMC: EN61000-6-2 / EN61000-6-4
CISPR22-EN55022

ELECTRICAL COMPATIBILITY CE
Energy: EN61036:1996

EMM-4h
EMM-4hp
EMM-4h-485
EMM-4hp-PF
EMM-4h-485-A
EMM-4hp-ETH

<table>
<tr><th></th><th>EMM 4h</th><th>EMM 4hp</th><th>EMM 4hp-485</th><th>EMM 4hp-PF</th><th>EMM 4hp-485-A</th><th>EMM 4hp-ETH</th></tr>
<tr><td>Mechanical characteristics</td><td colspan="6">Flush mounting DIN 96 x 96 mm I Depth 56 mm I Panel cut out 92x92 mm I Weight: 0,5 kg</td></tr>
<tr><td>Auxiliary supply</td><td colspan="6">110-230-400Vac I 50-60Hz (directly from voltage inputs)</td></tr>
<tr><td>OPTION C1</td><td colspan="6">20÷60Vac/dc</td></tr>
<tr><td>OPTION C2</td><td colspan="6">90÷250Vac/dc</td></tr>
<tr><td>Protection degree</td><td colspan="6">Frontal IP 52 I Box IP 20 (IP65 with external cover)</td></tr>
<tr><td>Voltage inputs</td><td colspan="6">3 inputs 500 V max (possible external VT ratio programmable 01÷400)</td></tr>
<tr><td>OPTION 600</td><td colspan="6">3 inputs 600 V max</td></tr>
<tr><td>Current inputs</td><td colspan="6">3 inputs 0,05÷5A rms with external CT ratio programmable 1÷ 2000</td></tr>
<tr><td>OPTION 1A</td><td colspan="6">3 inputs 0,01÷1A rms</td></tr>
<tr><td>OPTION T</td><td colspan="6">Isolated inputs with internal TA (for use in M.V.)</td></tr>
<tr><td>OPTION TT</td><td colspan="6">Direct inputs for Current max 10A</td></tr>
<tr><td>OPTION N</td><td colspan="6">4th input for measuring neutral current or residual current</td></tr>
<tr><td>Measured parameters</td><td colspan="6">V, I-n, A I cosfi, f, T, h I W, Var, VA I kWh, kVarh, KVAh</td></tr>
<tr><td>Measuring accuracy</td><td colspan="6">Voltage: < 0.5% I Current: < 0.5% I Powers: < 1% I Energies: < 1% series 2 I CEI-EN61036</td></tr>
<tr><td>Frequency measure</td><td colspan="6">40 ÷ 100 Hz</td></tr>
<tr><td>Serial outputs</td><td>-</td><td>-</td><td>1 Rs485
Communication protocol
MODBUS-RTU
Baud rate 9600-19200 bps</td><td>1 Rs485
Communication protocol
PROFIBUS-DP
Baud rate 9600-19200 bps</td><td>1 Rs485
Communication protocol
MODBUS-RTU
Baud rate 9600-19200 bps</td><td>-</td></tr>
<tr><td>OPTION S</td><td>-</td><td>-</td><td>-</td><td>Communication protocol
PROFIBUS-DP
Baud rate 2M bps MAX</td><td>-
-
-</td><td>-</td></tr>
<tr><td>OPTION LON</td><td>-</td><td>-</td><td>Communication
protocol LON-WORKS</td><td>-</td><td>Communication
protocol LON-WORKS</td><td>-</td></tr>
<tr><td>Ethernet Output</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-
-
-
-</td><td>1 ethernet connectos RJ45
Communication protocol
MODBUS-TCP
FTP/HTTP/SMTP/SNMP</td></tr>
<tr><td>Digital outputs</td><td>-</td><td>2 photomos
10 ÷ 300Vcc / 150mA o
10÷250Vca / 150mA max
for alarms or re-emission
pulses (programmable
time of pulse
100÷500msec.).</td><td>2 photomos
10 ÷ 300Vcc / 150mA o
10÷250Vca / 150mA max
for alarms or re-emission
pulses (programmable
time of pulse
100÷500msec.).</td><td>2 photomos
10 ÷ 300Vcc / 150mA o
10÷250Vca / 150mA max
for alarms or re-emission
pulses (programmable
time of pulse
100÷500msec.).</td><td>2 photomos
10 ÷ 300Vcc / 150mA o
10÷250Vca / 150mA max
for alarms or re-emission
pulses (programmable
time of pulse
100÷500msec.).</td><td>2 photomos
10 ÷ 300Vcc / 150mA o
10÷250Vca / 150mA max
for alarms or re-emission
pulses (programmable
time of pulse
100÷500msec.).</td></tr>
<tr><td>Digital inputs
OPTION</td><td>-</td><td>1 optoisolated
90÷250 Vca/cc
for changing band energy
meters or status signalling</td><td>1 optoisolated
90÷250 Vca/cc
for changing band energy
meters or status signalling</td><td>1 optoisolated
90÷250 Vca/cc
for changing band energy
meters or status signalling</td><td>1 optoisolated
90÷250 Vca/cc
for changing band energy
meters or status signalling</td><td>1 optoisolated
90÷250 Vca/cc
for changing band energy
meters or status signalling</td></tr>
<tr><td>Analog outputs</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1 output 0÷20 / 4÷20 mA
programmable
10 bit resolution</td><td>-</td></tr>
<tr><td>OPTION Z3AO</td><td>-</td><td>-</td><td>3 outputs 0-20 / 4-20 mA
programmable16 bit
definition(by external
serial/analog converter) *</td><td>-</td><td>3 outputs 0-20 / 4-20 mA
programmable16 bit
definition(by external
serial/analogl converter) *</td><td>-</td></tr>
<tr><td>Display</td><td colspan="6">4 displays with 10 mm red LED (3 digit of 10 mm - 7 segments)</td></tr>
</table>

* in this case serial output RS485 can not be used.

EMM

MULTIFUNCTION MULTIMETERS
FLUSH MOUNTING DIN 96 x 96 WITH REDUCED DEPTH

EMM-R3VA

EMM-R4h
EMM-R4hp
EMM-R4h-485

ENVIRONMENTAL WORKING CHARACTERISTICS
Working T: -5 ÷ +50°C
Storage T: -15 ÷ +60°C
Humidity: ≤90%

STANDARDS/ REGULATION
Safety: 61010-1:2001
EMC: EN61000-6-2 / EN61000-6-4
CISPR22-EN55022

ELECTRICAL COMPATIBILITY CE
Energy: EN61036:1996

	EMM R3VA	EMM R4h	EMM R4hp	EMM R4h-485
Mechanical characteristics	Flush mounting DIN 96 x 96 mm I Depth 56 mm I Panel cut out 92x92 mm I Weight: 0,5 kg			
Auxiliary supply	400 Vac L-L I 50-60 Hz (directly from voltage inputs)			
OPTION C1	230 Vac L-L			
OPTION C2	110 Vac L-L			
Protection degree	Frontal IP 52 I Box IP 20 (IP65 with external cover)			
Voltage inputs	3 inputs 500 V max (possible external VT ratio programmable 01÷400)			
Current inputs	3 inputs 0,05÷5A rms with external CT ratio programmable 1÷2000			
OPTION 1A	3 inputs 0,01÷1A rms			
OPTION T	Isolated inputs with internal TA (for use in M.V.)			
Measured parameters	V l-l, V l-n,	V l-l, V l-n, A	V l-l, V l-n, A	V l-l, V l-n, A
	A	cosfi, f, °T, h	cosfi, f, °T, h	cosfi, f, °T, h
	f	W, Var, VA	W, Var, VA	W, Var, VA
	h	kWh, kVarh, KVAh	kWh, kVarh, KVAh	kWh, kVarh, KVAh
Measuring accuracy CEI-EN61036	Voltage: < 0.5%	Voltage: < 0.5%	Voltage: < 0.5%	Voltage: < 0.5%
	Current: < 0.5%	Current: < 0.5%	Current: < 0.5%	Current: < 0.5%
	-	Powers: < 1%	Powers: < 1%	Powers: < 1%
	-	Energies: < 1% series 2	Energies: < 1% series 2	Energies: < 1% series 2
Frequency measure	40 ÷ 100 Hz			
Serial outputs	-	-	-	1Rs485 Communication protocol MODBUS-RTU baud rate 9600-19200 bps
Digital outputs	-	-	2 photomos 10÷300Vcc / 150 mA or 10÷250Vca/150 mA max for alarms or re-emission pulses (programmable time of pulse 100÷500 m Sec.).	-
OPTION P	2 photomos 10÷300Vcc / 150 mA or 10÷250Vca/150 mA max for alarms			
Analog outputs				
OPTION Z3AO	-	-	-	3 outputs 0-20/4-20mA completely programmable - definition16 bit (by external serial/analog converter Z3AO) *
Display	3 display with 10 mm red LED (3 digit of 10 mm - 7 segments)	4 displays with 10 mm red LED (3 digit of 10 mm - 7 segments)		

* in this case serial output RS485 can not be used.

EMM

MULTIFUNCTION MULTIMETERS
FLUSH MOUNTING DIN 72 x 72

EMM-µ3VA

EMM µ4h
EMM µ4hp
EMM µ4h-485

ENVIRONMENTAL WORKING CHARACTERISTICS
Working T: -5 ÷ +50°C
Storage T: -15 ÷ +60°C
Humidity: ≤90%

STANDARDS/ REGULATION
Safety: 61010-1:2001
EMC: EN61000-6-2 / EN61000-6-4
CISPR22-EN55022

ELECTRICAL COMPATIBILITY CE
Energy: EN61036:1996

	EMM µ3VA	EMM µ4h	EMM µ4hp	EMM µ4h-485
Mechanical characteristics	Flush mounting DIN 72 x 72 mm I Depth 80 mm I Panel cut out 68x68 mm I Weight: 0,5 kg			
Auxiliary supply	400 Vac L-L I 50-60 Hz (directly from voltage inputs)			
OPTION C1	230 Vac L-L			
OPTION C2	110 Vac L-L			
Protection degree	Frontal IP 52 I Box IP 20 (IP65 with external cover)			
Voltage inputs	3 inputs 500 V max (possible external VT ratio programmable 01÷400)			
Current inputs	3 inputs 0,05÷5A rms with external CT ratio programmable 1÷2000			
OPTION 1A	3 inputs 0,01÷1A rms			
OPTION T	Isolated inputs with internal TA (for use in M.V.)			
Measured parameters	V l-l, V l-n,	V l-l, V l-n, A	V l-l, V l-n, A	V l-l, V l-n, A
	A	cosfi, f, °T, h	cosfi, f, °T, h	cosfi, f, °T, h
	f	W, Var, VA	W, Var, VA	W, Var, VA
	h	kWh, kVarh, KVAh	kWh, kVarh, KVAh	kWh, kVarh, KVAh
Measuring accuracy CEI-EN61036	Voltage: < 0.5%	Voltage: < 0.5%	Voltage: < 0.5%	Voltage: < 0.5%
	Current: < 0.5%	Current: < 0.5%	Current: < 0.5%	Current: < 0.5%
	-	Powers: < 1%	Powers: < 1%	Powers: < 1%
	-	Energies: < 1% series 2	Energies: < 1% series 2	Energies: < 1% series 2
Frequency measure	40 ÷ 100 Hz			
Serial outputs	-	-	-	1Rs485 Communication protocol MODBUS-RTU baud rate 9600-19200 bps
Digital outputs	-	-	2 photomos 10÷300Vcc / 150 mA or 10÷250Vca/150 mA max for alarms or re-emission pulses (programmable time of pulse 100÷500 m Sec.).	-
OPTION P	2 photomos 10÷300Vcc / 150 mA or 10÷250Vca/150 mA max for alarms			
Analog outputs				
OPTION Z3A0	-	-	-	3 outputs 0-20/4-20mA completely programmable - definition16 bit (by external serial/analog converter Z3A0) *
Display	3 display with 10 mm red LED (3 digit of 10 mm - 7 segments)	4 displays with 10 mm red LED (3 digit of 10 mm - 7 segments)		

* in this case serial output RS485 can not be used.