

OVERVIEW

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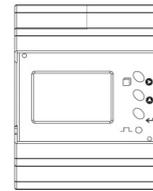


DIN RAIL MOUNT

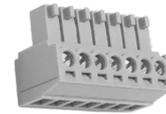
Modbus RTU over RS485

Pulse Output

CE RoHS ✓



X 1



X 1



X 1

SPECIFICATIONS

Wiring input	3 Phase 4 wire / 1 Phase 2 wire
Rated input voltage	60 - 300V AC (L-N); 104 - 520V AC (L-L)
Frequency range	45 - 65Hz
CT primary	5A - 10,000A
CT secondary	330mV
VT primary	100V - 10kV
VT secondary	100 - 500V AC (L-L)
Auxiliary	Self supplied (L1)
Voltage rated burden	<8VA (L1 - supply), <0.2VA (L2 & L3)
Operating temperature	-10...+55°C
Storage temperature	-20...+70 °C
Humidity	0...85% non-condensing
Weight	191g
Pulse output	5-27V DC / I _{max} = 100mA
Installation category	III

ACCURACY

Voltage V _{L-N}	± 0.5% of full scale
Voltage V _{L-L}	
Current	± 0.1% (L-N >20V / L-L >35V)
Frequency	
Active power	± 1% of full scale
Reactive power	
Apparent power	
Active energy	Class 1 (IEC/EN62053-21)
Reactive energy	Class 2 (IEC/EN62053-23)
MAX / MIN (Active power / Reactive power / Apparent power)	± 1% of full scale
Power factor	± 0.01 of unity
THD	3%

SAFETY PRECAUTIONS

- ⚠** Safety related notification, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of personnel as well as the instrument.
- Hager JKM01 shall only be used with CTs and RJ45 cables references from Hager
 - If the equipment is not used in a manner specified by the manufacturer it may impair the protection provided by the equipment
 - Do not use the equipment if there are mechanical damage
 - Do not exceed the stated maximum ratings of the device
 - No repairs, maintenance or adjustments are possible
 - Read the complete instruction manual prior to installation or operating the unit
 - The equipment in its installed state must not come into close proximity to any heating sources, oils, steam, caustic vapours or other unwanted process by-products
 - Do not use in hazardous or classified location where explosion or other dangers can be triggered by the device

WIRING GUIDELINES

- ⚠** Risk of electric shock!
Installation process must be performed by qualified and trained personnel only.
- To prevent the risk of electrocution, always isolate and lock-off the power supply to the equipment prior to undertaking any work
 - Always confirm absence of electricity prior to starting work using appropriate voltage detection equipment
 - Wiring shall be done strictly according to the terminal layout
 - Confirm that all connections are correct before energizing the equipment
 - Routing of cables shall be way from any internal EMI source
 - Copper cable should be used
 - All wiring to be in accordance with applicable local standards

RESOLUTION

VT Ratio x CT Ratio	kWh	
< 15	0.01k	0.001k
< 150	0.1k	0.01k
< 1500	1k	0.1k
< 15000	0.01M	0.001M
≥ 150000	0.1M	0.01M

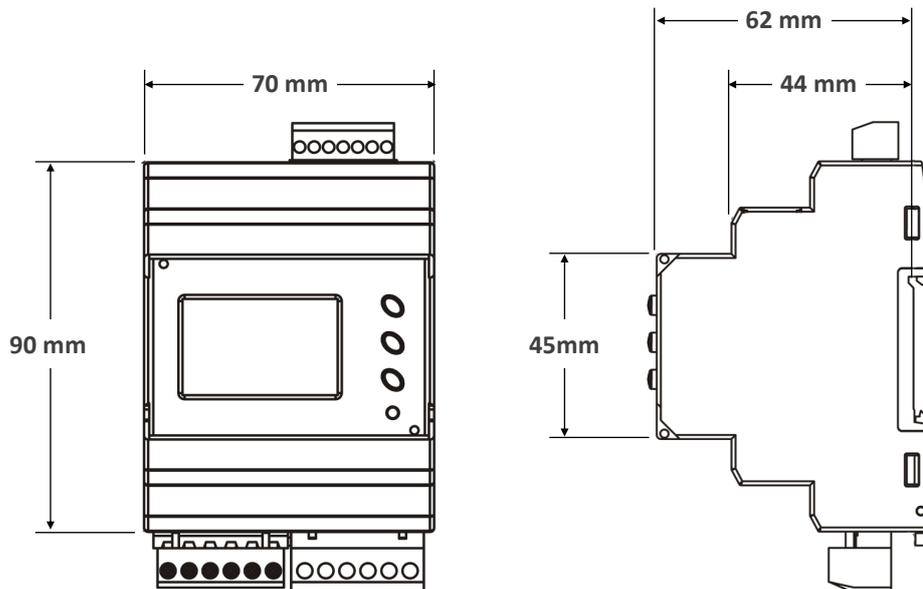
1. V / A / W / VA / VAR = auto adjust
2. PF = 0.01

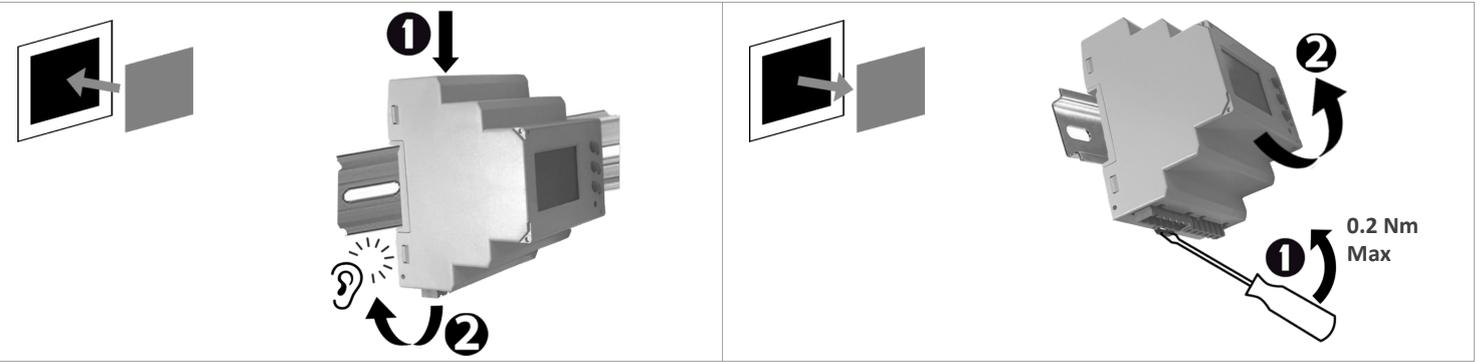
SERIAL COMMUNICATION

Standard & Protocol	RS485 & Modbus RTU
Communication address	1 to 255
Transmission mode	Half duplex
Data types	Float & Integer
Transmission distance	500m (max)
Transmission speed	300,600, 1200, 2400, 4800, 9600, 19200 bps
Parity	None, Odd, Even
Stop bits	1 or 2
Response time	100mS (Max and independent of baud rate)

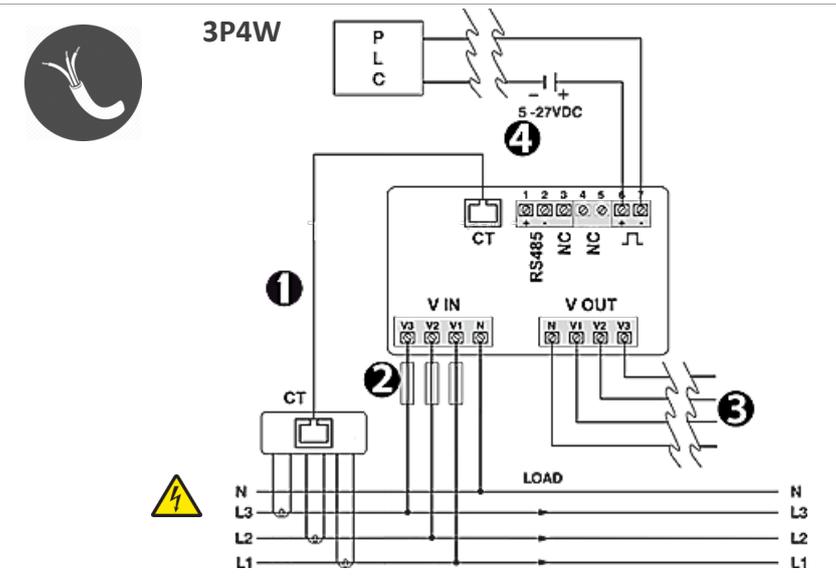
Modbus Register Addresses List available for download at www.hager.co.uk, alternatively contact Customer Service.

MECHANICAL DIMENSIONS

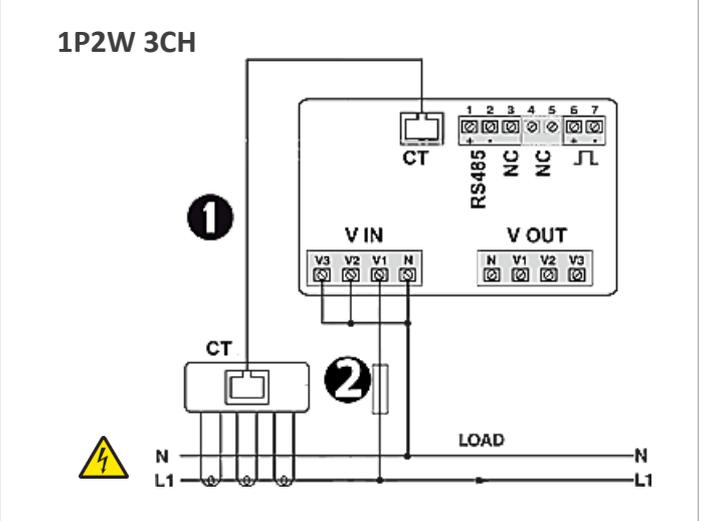
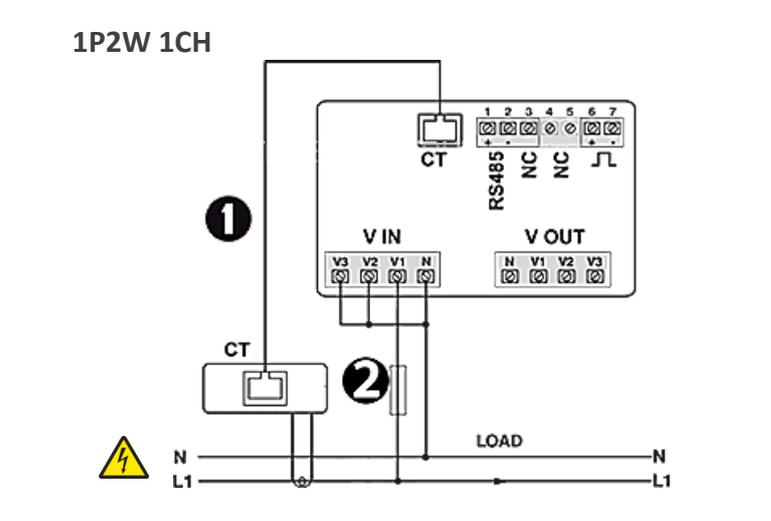




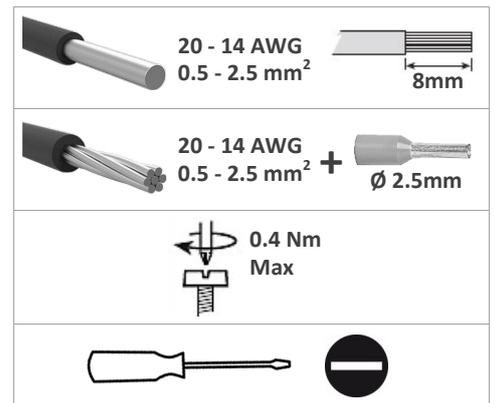
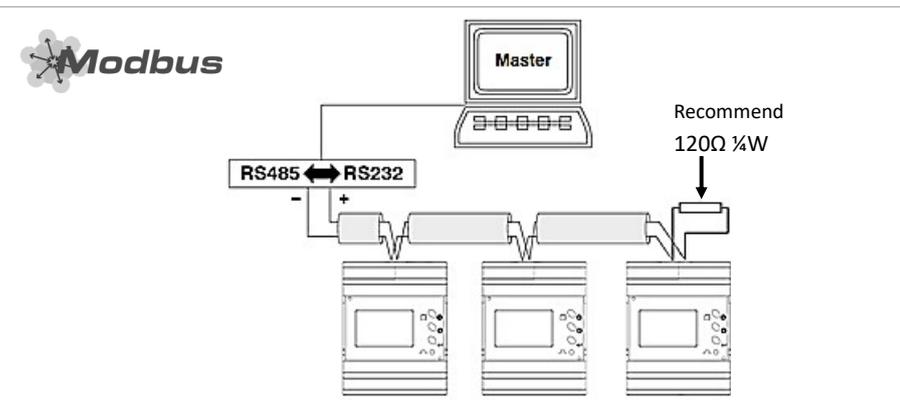
WIRING DIAGRAM | SCHALTPLAN | SCHÉMA DE CÂBLAGE | DIAGRAMA DE CABLEADO



1. Hager RJ45 cable
2. Fuse class CC UL / fast acting 600V
3. Supply 31 additional meters (32 total)
4. Voltage must be provided except for PLC's that has self-excited digital input



The wiring is identical for P2 and P3 configuration but the voltage reference needs to be moved to V2 or V3 (V1 shown).



CONFIGURATION

Buttons

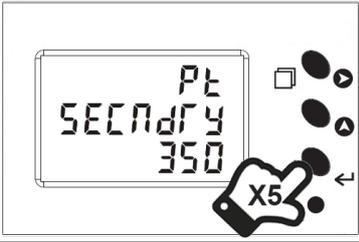
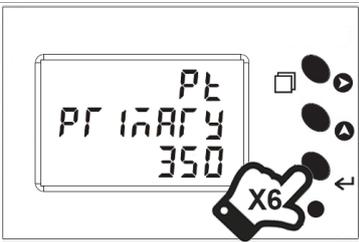
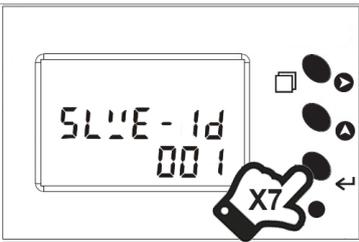
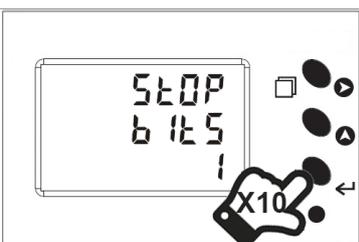
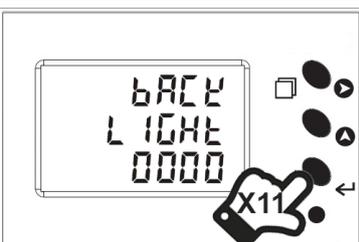
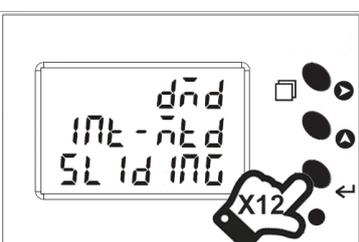
-  Right
-  Increase
-  Enter and next

Symbols

-  Press x times
-  Sub-menu
-  Hold x sec
-  Factory default
-  Adjustment options

Password or Exit Config		1	2	3
		Select digit	Change digit	→ 1
		 1000	 0000 - 9999	
1 Change password		1	2	3
		Select digit	Change digit	NO → 2 YES → 1.1
		 NO	 NO / YES	
1.1 New password		1	2	3
		Select digit	Change digit	→ 2
		 1000	 0000 - 9999	
2 Network selection		1	2	3
		Select option	Change option	→ 3
		 3P4W	 3P4W / 1P2W-P1 / 1P2W-P2 / 1P2W-P3	
3 CT secondary		1	2	3
		X	X	→ 4
		 5	 Preset	
4 CT primary		1	2	3
		Select digit	Change digit	→ 5
		 160	 5A - 10000A (10kA)	

CONFIGURATION

<p>5 VT secondary</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 6</p>
		<p> 350  173 - 415V</p>		
<p>6 VT primary</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 7</p>
		<p> 350  100V - 500kV</p>		
<p>7 Slave ID</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 8</p>
		<p> 1  1 - 255</p>		
<p>8 Baud rate</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>→ 9</p>
		<p> 9600  300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200</p>		
<p>9 Parity</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>→ 10</p>
		<p> None  None / Even / Odd</p>		
<p>10 Stop bits</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>→ 11</p>
		<p> 1  1 / 2</p>		
<p>11 Backlight Duration</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 12</p>
		<p> 0000  0 - 7200 Sec</p>		
<p>12 Demand interval method</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>→ 13</p>
		<p> Sliding  Sliding / Fixed</p>		

CONFIGURATION

<p>13 Demand interval duration</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 14</p>
		<p> 15 1 - 30</p>		
<p>14 Demand interval length</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 15</p>
		<p> 1 1 - 30 min</p>		
<p>15 Pulse weight</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 16</p>
		<p> 0.10 00.01 - 99.99kW</p>		
<p>16 Pulse duration</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 17</p>
		<p> 0.1 0.1 - 2.0 Sec</p>		
<p>17 Factory default</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>→ 18</p>
		<p> No No / Yes</p>		
<p>18 Reset energy and max demand</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>NO → 1 YES → 18.01</p>
		<p> No No / Yes</p>		
<p>18.01 Password (Reset only)</p>		<p>1 </p> <p>Select digit</p>	<p>2 </p> <p>Change digit</p>	<p>3 </p> <p>→ 18.02</p>
		<p> Password +1 (1001)</p>		
<p>18.02 Reset active energy</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>→ 18.03</p>
		<p> No No / Yes</p>		

CONFIGURATION

<p>18.03 Reset reactive energy</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>→ 18.04</p>
		<p> No No / Yes</p>		
<p>18.04 Reset max power</p>		<p>1 </p> <p>Select option</p>	<p>2 </p> <p>Change option</p>	<p>3 </p> <p>→ 1</p>
		<p> No No / Yes</p>		

CT Rotation

Right Hand

↓

Left Hand

Voltage phase sequence

= L1 → L2 → L3

✓

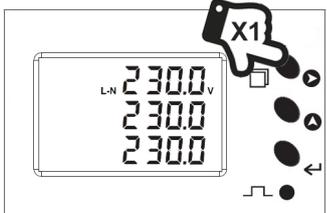
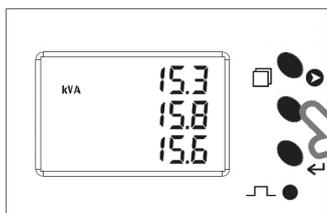
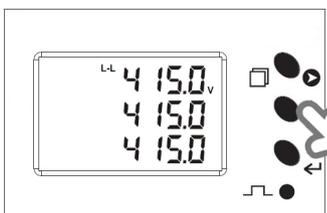
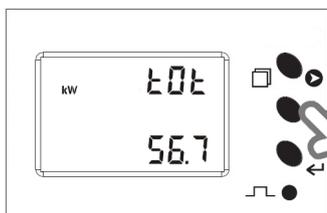
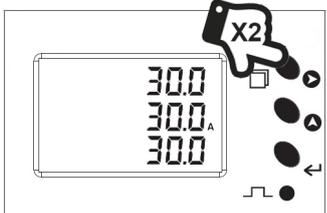
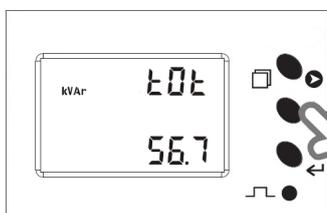
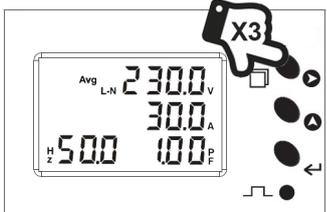
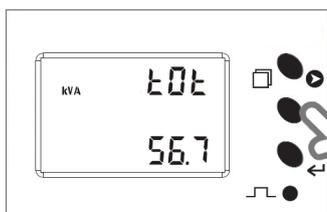
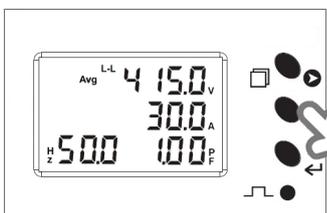
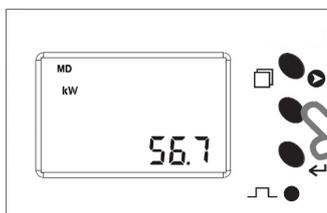
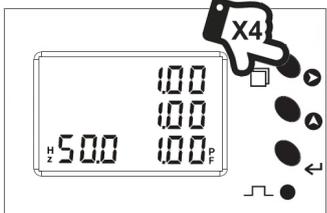
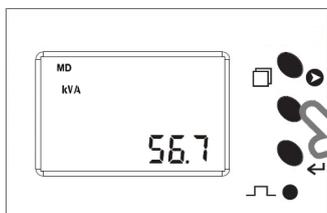
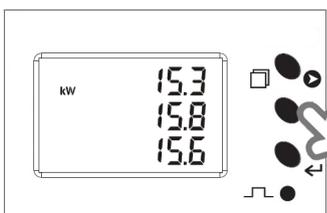
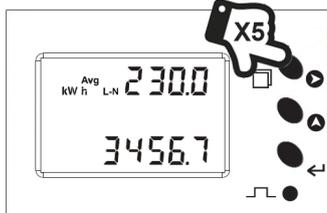
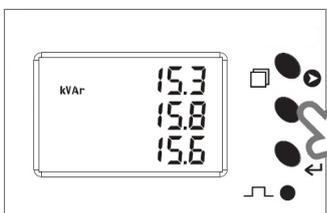
= L1 → ~~L2~~ → L3?
(Missing phase)

= L3 → L2 → L1?
(Reverse sequence)

✗

Serial Number

 <p>Change menu</p>	 <p>Change parameter</p>	<p>∅ = Phase Avg = Average Σ = Total PF = Power Factor</p>
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<p>Menu 1.0</p> <ul style="list-style-type: none"> L1 V(L-N) L2 V(L-N) L3 V(L-N) <p>1P2W > show 1 Phase</p>		<p>4.3</p> <ul style="list-style-type: none"> L1 kVA L2 kVA L3 kVA <p>1P2W > show 1 Phase</p>	
<p>1.1</p> <ul style="list-style-type: none"> L1 V(L-L) L2 V(L-L) L3 V(L-L) <p>1P2W ✖</p>		<p>4.4</p> <ul style="list-style-type: none"> Σ 3∅ kW <p>1P2W > show 1 Phase</p>	
<p>Menu 2.0</p> <ul style="list-style-type: none"> L1 Amp L2 Amp L3 Amp <p>1P2W > show 1 Phase</p>		<p>4.5</p> <ul style="list-style-type: none"> Σ 3∅ kVAr <p>1P2W > show 1 Phase</p>	
<p>Menu 3.0</p> <ul style="list-style-type: none"> Avg 3∅ V(L-N) Σ 3∅ Amp Avg 3∅ PF Hz <p>1P2W ✖</p>		<p>4.6</p> <ul style="list-style-type: none"> Σ 3∅ kVA <p>1P2W > show 1 Phase</p>	
<p>3.1</p> <ul style="list-style-type: none"> Avg 3∅ V(L-L) Σ 3∅ Amp Avg 3∅ PF Hz <p>1P2W ✖</p>		<p>4.7</p> <ul style="list-style-type: none"> Max Σ 3∅ kW <p>1P2W > show 1 Phase</p>	
<p>Menu 4.0</p> <ul style="list-style-type: none"> L1 PF L2 PF L3 PF Hz <p>1P2W > show 1 Phase</p>		<p>4.8</p> <ul style="list-style-type: none"> Max Σ 3∅ kVA <p>1P2W > show 1 Phase</p>	
<p>4.1</p> <ul style="list-style-type: none"> L1 kW L2 kW L3 kW <p>1P2W > show 1 Phase</p>		<p>Menu 5.0 Default screen</p> <ul style="list-style-type: none"> Avg 3∅ V(L-N) kWh <p>1P2W > show 1 Phase</p>	
<p>4.2</p> <ul style="list-style-type: none"> L1 kVAr L2 kVAr L3 kVAr <p>1P2W > show 1 Phase</p>		<p>5.1</p> <ul style="list-style-type: none"> Avg 3∅ V(L-L) kVArh <p>1P2W > show 1 Phase</p>	