

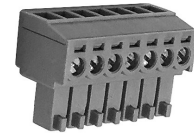

easywire

2x 3Ø
2x 1Ø
6x 1Ø


Pulse SO

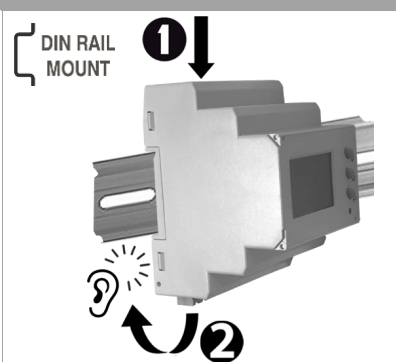
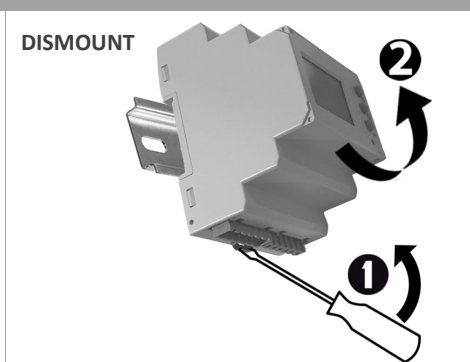
**DIN RAIL
MOUNT**

Modbus RTU
RI-D360-G-C

M-Bus
RI-D360-G-MB

X 1
**UK
CA**
CE


Specifications		Accuracy					
Wiring Input	3Ø 4 wire 1Ø 2 wire - P1, P2, P3	Voltage V L-N and V L-L			±0.5% of full scale		
Rated Input Voltage	3x 60...300V AC (L-N), 104..520V AC (L-L)	Current			±0.5% of full scale		
Frequency	45...65Hz	Frequency for L-N > 20V, L-L > 35V			±0.1% of full scale		
CT Primary	5...10,000A configurable	Active, Reactive and Apparent Power			1%		
CT Secondary	0.01...1(1.2)A (Meter Input: 330mV)	Power Factor			±0.01 of Unity		
VT Primary	100V...10kV AC (L-L) configurable	Active Energy			Class 1 (IEC/EN62053-21)		
VT Secondary	100...500V AC (L-L) configurable	Reactive Energy			Class 2 (IEC/EN62053-23)		
Auxiliary / Voltage Rated Burden	Supplied from V1 only / < 8VA						
Display Update Rate	1 sec all parameters	Wh Resolution and Default Pulse Weight					
Operating / Storage Temperature	-10...55°C / -20...75°C	CT Ratio x VT Ratio	<15	<150	<1500	<15k	<150k
Humidity	0...85% non-condensing	Wh / VAh / VArh	0.01k	0.1k	1k	0.01M	0.1M
Protection Degree (IEC/EN60529)	IP54 (front of Housing), IP20 (terminals)	INT 	0.001k	0.01k	0.1k	1k	0.01M
Communication	Modbus RTU over RS485 MBus (EN13757)	Example If CT Primary = 200A (CT ratio = 200/1 = 200) & VT = 350/350V (VT Ratio = 1) Wh resolution = 1kWh (200 x 1 = <1500) Pulse O/P default = 1kWh/pulse					

MECHANICAL INSTALLATION

 DIN RAIL MOUNT	 DISMOUNT	DIN rail mounted, this device must be installed within a suitable IP rated enclosure. Indoor use only. Installation category: III (300V L-N) Protection Class: II Pollution degree: II Altitude: up to 2000 m All terminal covers must be fitted after wiring
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PRODUCT SAFETY

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. 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



Risk of electric shock!
Only to be installed by a competent person

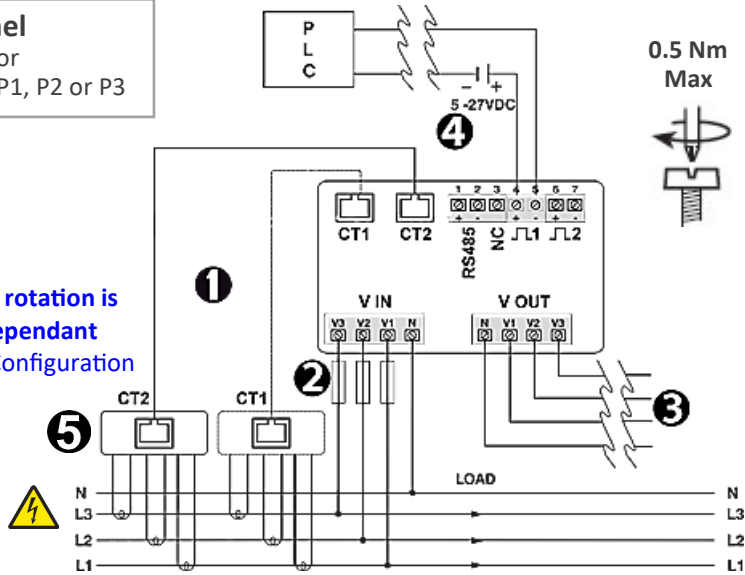
- To prevent the risk of electrocution, always isolate and lock-off the power supply to the equipment prior to undertaking any work
- Always confirm absence of electricity prior to starting work using appropriate voltage detection equipment
- Wiring shall be done strictly according to the terminal layout
- Confirm that all connections are correct before energizing the equipment
- Routing of cables shall be away from any internal EMI source
- Copper cable should be used
- All wiring to be in accordance with applicable local standards

WIRING

2 Channel

2x 3P4W or
2x 1P2W P1, P2 or P3

CT phase rotation is
RH/LH dependant
refer to Configuration

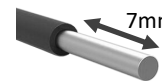


- 1 RJ45 cable
- 2 Fuse class CC UL / fast acting
3 Phase 600V/Single Phase 250V

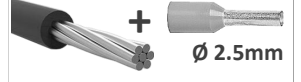
No. Meters	≤ 5	≤ 10	≤ 20	≤ 32
Fuse Rating	0.5A	1A	1.5A	2A

- 3 Supply 31 additional meters (32 total)
- 4 For 'Volt-free' PLC or digital input, voltage must be provided by the addition of a DC PSU
- 5 For Single Phase Easywire CT - Set Phase Network to 1P2W-P1, Voltage Reference V1 must be same phase as CT. Connect V2/V3 to N.

Single Core $0.5 > 4\text{mm}^2$
 $\varnothing 2.5\text{mm Max}$



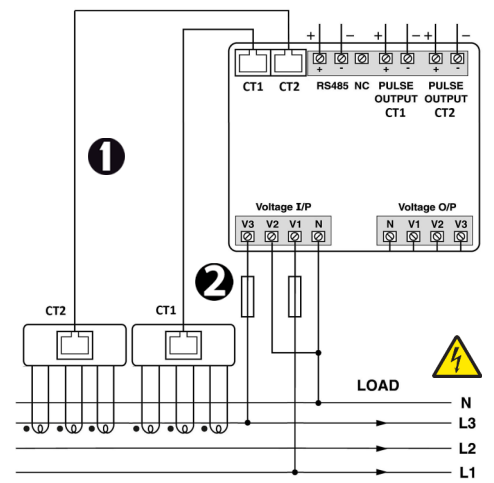
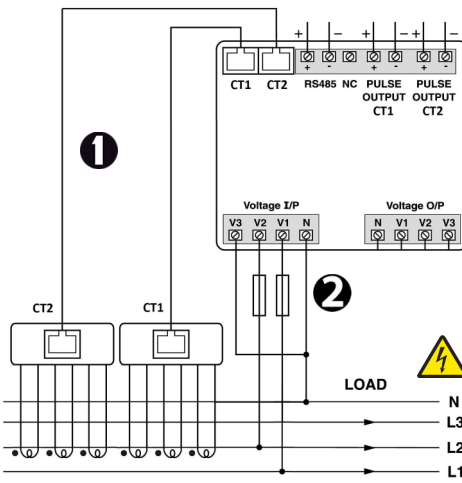
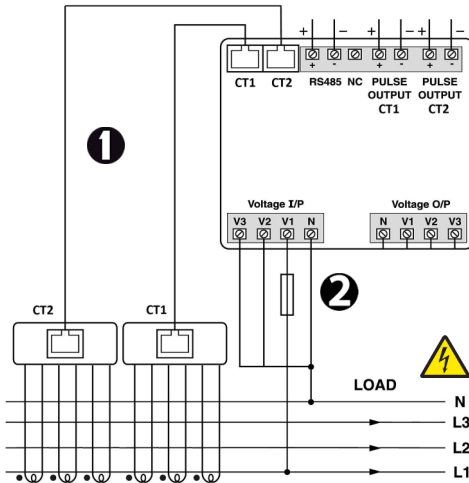
Stranded $0.5 > 2.5\text{mm}^2$



6 CH 1P2W-P1 (6x L1)

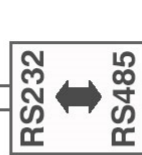
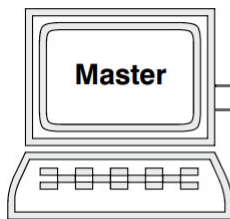
6 CH 1P2W-P2 (6x L2)

6 CH 1P2W-P3 (6x L3)



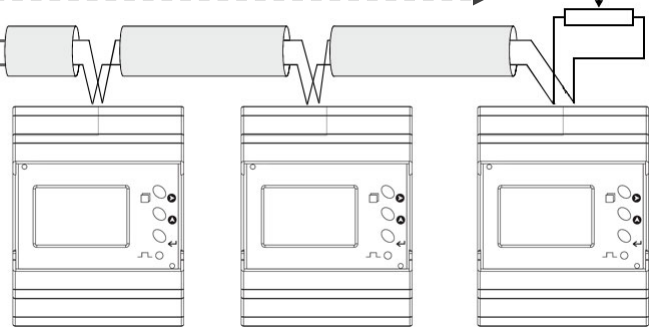
Modbus / MBus

Typical Modbus
configuration shown
For MBus interface
follow Wiring
Topology below



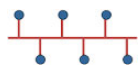
500m Max, ≤ 32 meters

Recommended termination
resistor 120 Ω



Wiring Topology

A | B



Daisy Chain



Star Network

Modbus

+ | -

✓

✗

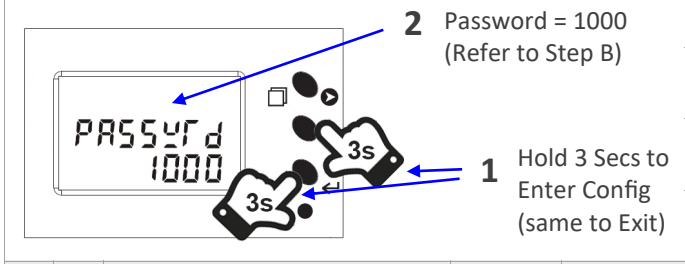
MBus

1 | 2

✓

✓

Step A: Enter Configuration Menu



2 Password = 1000
(Refer to Step B)

1 Hold 3 Secs to Enter Config
(same to Exit)

2 Password = 1000
(Refer to Step B)

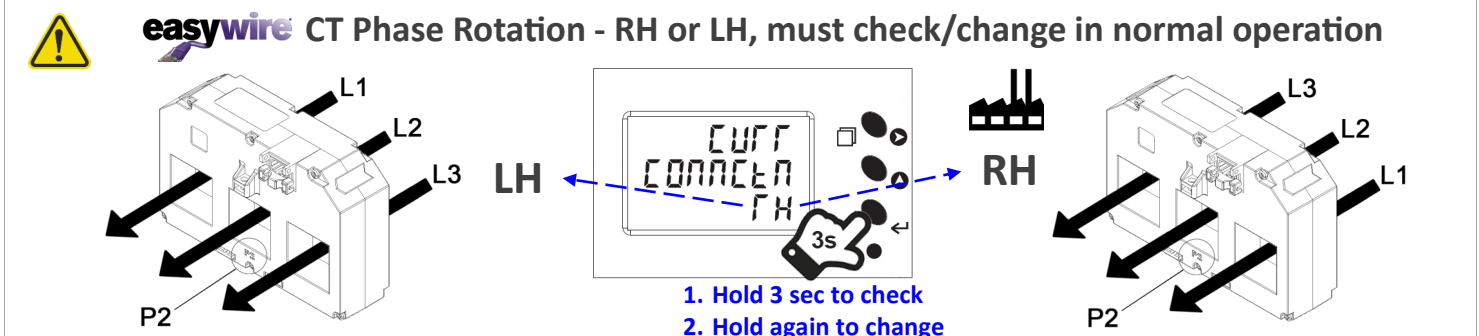
1 Hold 3 Secs to Enter Config
(same to Exit)

Step B: Configure each setting, as required, referring to

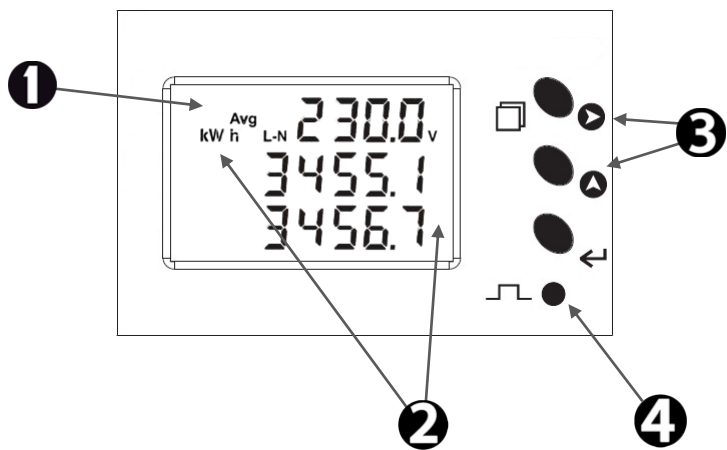
Config Table below, using the buttons as follow:

1		Press once to make digit or option flash, press again to move flashing cursor
2		Press to change digit or option, press  to move cursor position as required
3		Press to save and move to next setting option, Exit menu once all settings are configured (see Step A)

D460-G-C	D460-G-MB	Setting	Default	Adjustment Range	Network & CT	VT	Comms	Pulse O/P	System Settings
					Must configure	Adjust if Using VT	Modbus / MBus	Adjust if utilised	Optional
1	1	Change Password	1000	NO / YES (0000 - 9998)					✓
2	2	Channel Selection	2 CH	2 CH (2x 3P4W / 1P2W) 6 CH (6x 1P2W)	✓				
3	3	Phase Network Selection	3P4W	3P4W, 1P2W-P1/P2/P3	✓				
4	4	CT Secondary	5	Non-adjustable					
5	5	CT Primary 1 (see CT Label)	160	5 > 10000A	✓				
6	6	CT Primary 2 (see CT Label)	160	5 > 10000A	✓				
7	7	PT Secondary	350	100 > 500V		✓			
8	8	PT Primary	350	100 > 10000V		✓			
9	9	Slave ID <i>Modbus:</i> <i>MBus (Primary ID):</i>	1 1	1 > 255 1 > 250			✓		
10	10	Baud rate <i>Modbus:</i> <i>MBus:</i>	9600 2400	300 > 19200 bps 1200 > 9600			✓		
11	11	Parity <i>Modbus:</i> <i>MBus:</i>	None Even	None / Odd / Even Even			✓		
12	12	Stop Bit <i>Modbus:</i> <i>MBus:</i>	1 1	1 / 2 1			✓		
13	13	Back Light Off (0000 = Never)	0000	0 > 7200 Sec					✓
14	14	Demand interval method	Sliding	Sliding / Fixed					✓
15	15	Demand interval duration	15	1 > 30 min					✓
16	16	Demand interval length	1	1 > 30 min					✓
17	17	Pulse Weight CT1	0.10	0.01 > 9.99 kWh/imp				✓	
18	18	Pulse Weight CT2	0.10	0.01 > 9.99 kWh/imp				✓	
19	19	Pulse Duration	200	50 > 300 mS				✓	
X	20	MBus Secondary ID	Serial #	0000 0000 > 9999 9999			✓		
20	21	Factory Default	No	No / Yes	Does not reset energy & demand values				✓
21	22	Reset Energy & Demand	No	No / Yes (Password +1)	Once entered, reset each value individually				✓



OPERATION



1 Display Symbols:

- Avg** Average of 3-phase
- tOt** Total of 3-phase
- MD** Max Demand
- L-N** Line to Neutral
- RS485 communication in progress

2 Measurement Units (refer to Functions Table below)

V, kWh, kVAh, A, Hz, kW, kVA, kVAh, kVA
CT Indicators: 1 = CT1, 2 = CT2

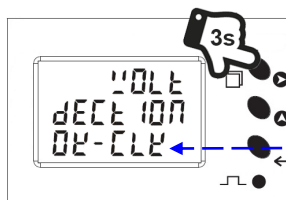
3 Navigation Buttons:

- Change **PARAMETER**
- Change **PAGE**
(hold 10 sec: Serial #)

4 Integration of Energy Indicator (blinks at rate of INT)

2 CHANNEL				Power Factor (PF) & Power (P)			
Energy		x1 Voltage	x2 Current	2 Channel		6 Channel	
x1	Avg Voltage (V L-N) Active Energy CH1 (kWh) Active Energy CH2 (kWh)	Phase Voltage (V L-N)	CH1 Phase Current (A)		Phase PF CH1 Frequency (Hz)	Phase PF CH1 / CH2 / CH3 Frequency (Hz)	
	Avg Voltage (V L-N) Reactive Energy CH1 (kVAh) Reactive Energy CH2 (kVAh)	Phase Voltage (V L-L) *3P4W only*	CH2 Phase Current (A)	x1	Phase PF CH2 Frequency (Hz)	Phase PF CH4 / CH5 / CH6 Frequency (Hz)	
x2	Avg Voltage (V L-N) Active Energy All CH (kWh)			x2	Phase Active P CH1 (kW)	Active P CH1 / CH2 / CH3 (kW)	
x3	Avg Voltage (V L-N) Reactive Energy All CH (kVAh)			x3	Phase Active P CH2 (kW)	Active P CH4 / CH5 / CH6 (kW)	
				x4	Phase Reactive P CH1 (kVAh)	Reactive P CH1 / CH2 / CH3 (kVAh)	
				x5	Phase Reactive P CH2 (kVAh)	Reactive P CH4 / CH5 / CH6 (kVAh)	
				x6	Phase Apparent P CH1 (kVA)	Apparent P CH1 / CH2 / CH3 (kVA)	
				x7	Phase Apparent P CH2 (kVA)	Apparent P CH4 / CH5 / CH6 (kVA)	
				x8	tOt Active P CH1 (kW) tOt Active P CH2 (kW)	tOt Active P CH1+2+3 (kW) tOt Active P CH4+5+6 (kW)	
				x9	tOt Reactive P CH1 (kVAh) tOt Reactive P CH2 (kVAh)	tOt Reactive P CH1+2+3 (kVAh) tOt Reactive P CH4+5+6 (kVAh)	
				x10	tOt Apparent P CH1 (kVA) tOt Apparent P CH2 (kVA)	tOt Apparent P CH1+2+3 (kVA) tOt Apparent P CH4+5+6 (kVA)	
				x11	tOt Active MD CH1 (kW) tOt Active MD CH2 (kW)	Active MD CH1 / CH2 / CH3 (kW)	
				x12	tOt Apparent MD CH1 (kVA) tOt Apparent MD CH2 (kVA)	Apparent MD CH1 / CH2 / CH3 (kVA)	
				x13		Active MD CH4 / CH5 / CH6 (kW)	
				x14		Apparent MD CH4 / CH5 / CH6 (kVA)	

6 CHANNEL			
Energy		x1 Voltage	x2 Current
	Avg Voltage (V L-N) [all pages] Active Energy CH1 (kWh)	Phase Voltage (V L-N)	Phase Current (A) CH1 / CH2 / CH3
x1	Avg Voltage (V L-N) [all pages] Reactive Energy CH1 (kVAh)		Phase Current (A) CH4 / CH5 / CH6
x2	Active Energy CH2 (kWh)		
x3	Reactive Energy CH2 (kVAh)		
x4	Active Energy CH3 (kWh)		
x5	Reactive Energy CH3 (kVAh)		
x6	Active Energy CH4 (kWh)		
x7	Reactive Energy CH4 (kVAh)		
x8	Active Energy CH5 (kWh)		
x9	Reactive Energy CH5 (kVAh)		
x10	Active Energy CH6 (kWh)		
x11	Reactive Energy CH6 (kVAh)		
x12	Active Energy All CH (kWh)		
x13	Reactive Energy All CH (kVAh)		



Voltage Phase Rotation

Hold 3 Sec

OK-CLK: L1 → L2 → L3 ✓
ANTI-CK: Incorrect Order
INVAL Id: Missing Phase ✗