1 Product Introduction

M3-40 is a three-phase meter designed for electricity monitoring and power metering in PV system and other scearios. It is small in size and easy to use, and offers precise power metering.

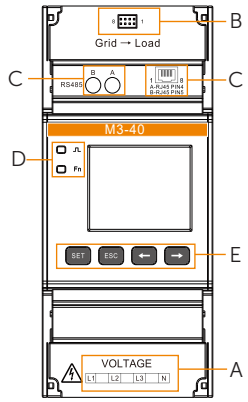


Figure 1-1 M3-40 appearance

Table 1-1 Description of meter appearance

No.	Type	Marking	Definition
A	Terminal	L1, L2 and L3	UL terminal, connected to the L wires of the grid
		N	UN terminal, connected to the N wire of the grid
B		8 1	Current input terminal, connected to the batch of CTs
		A	RS485 terminal A
		B	RS485 terminal B
C		A-RJ45 PIN4	RJ45 PIN4: RS485 terminal A
		B-RJ45 PIN5	RJ45 PIN5: RS485 terminal B
D	Indicator	⎍	Pulse indicator, flashes when the meter is working normally
		Fn	Function indicator, flahses when the meter phase sequence is being adjusted
E	Function button	SET	• Enter the parameter setting interface • Confirm the selection • Shift the cursor (when inputting digits)
		ESC	Exit from the current interface
		→	• Go to the next item • Increase the value
		←	• Go to the next item • Decrese the value

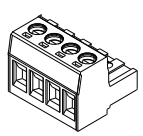
2 Scope of Delivery

A



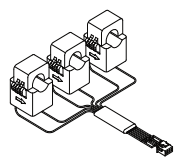
1 × M3-40

B



1 × 4-pin terminal block

C



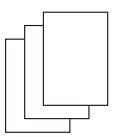
1 × 2m CT batch

D



1 × 5m COM cable

E



Document

3 Typical Networking Diagrams

The following diagrams use European TN-S for example, and are for reference only.

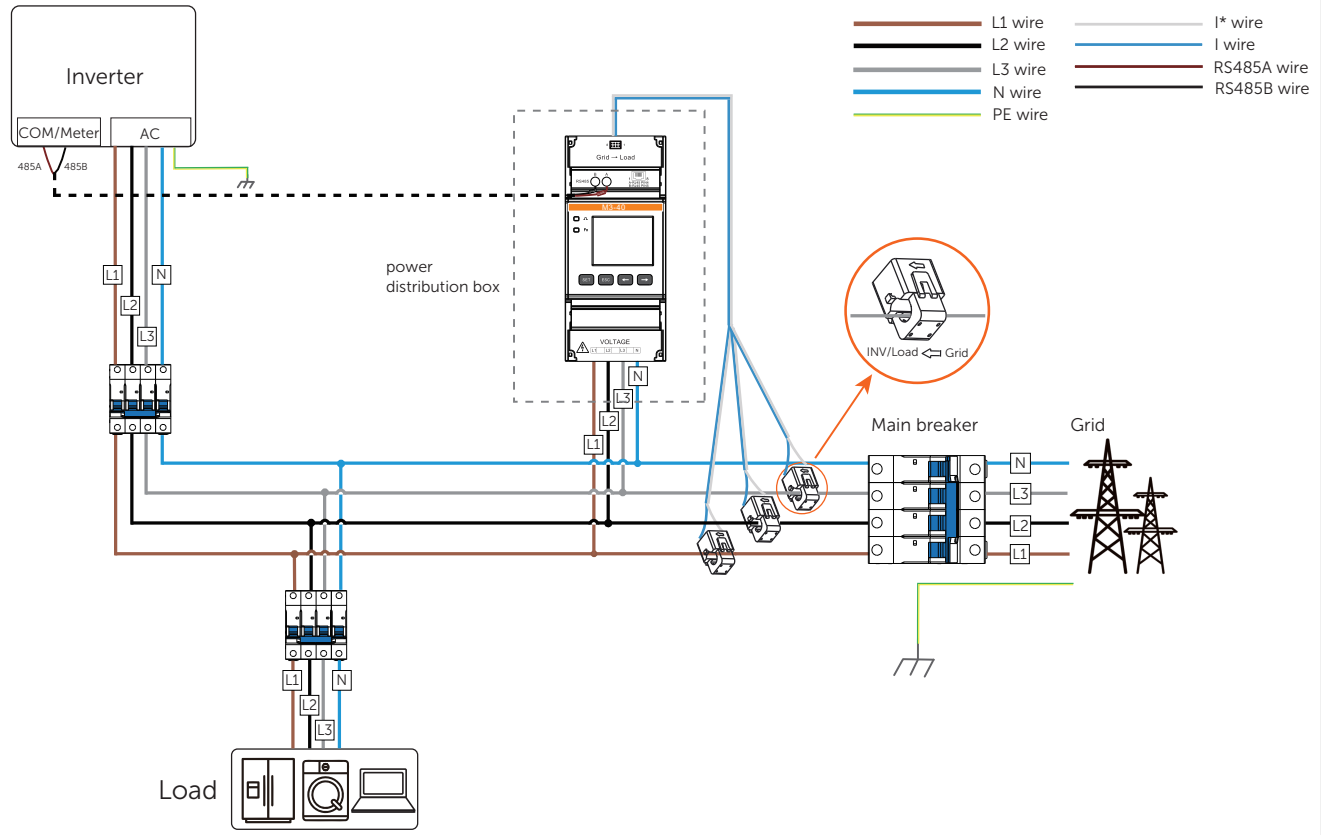


Figure 3-1 Networking through RS485 cable

The meter can also work with Wi-BR for data transmission within up to 200 m horizontally and 20 m vertically*.

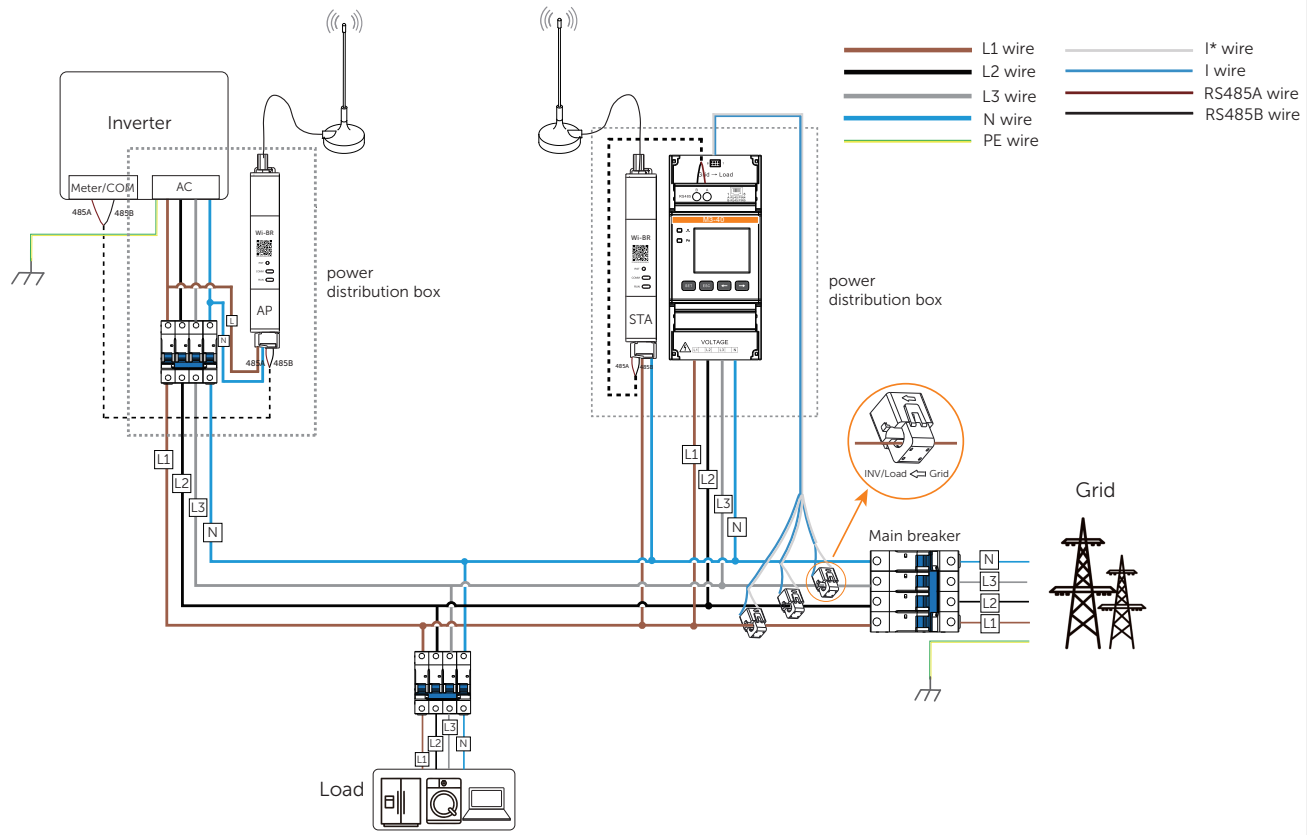


Figure 3-2 Wireless data transmission through Wi-BR

Note: The transmission data of Wi-BR comes from test results conducted in SolaX laboratories.

Scan for User Manual

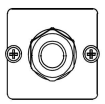
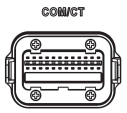
4 Compatible Inverters and Pin Definition

NOTICE

For single-phase inverters, make sure to connect the voltage output cables to L1 and N wire terminal.

Single Phase Inverter Models

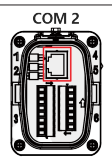
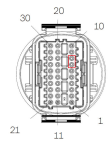
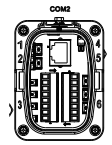
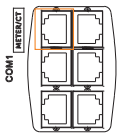
Table 4-1 SolaX inverter models and pin definition (1)

Inverter series	Terminal type	Connector type	Pin No.	Pin definition
X1-HYB LV		RJ45	4	485A
			5	485B
X1-AC		RJ45	7	485A
			8	485B
• X1-HYB G4 • X1-FIT G4 • X1-IES • X1-VAST	 Meter/CT	RJ45	4	485A
			5	485B
• X1-MINI G4 • X1-BOOST G4		RJ45	4	485A
			5	485B
X1-SMART G2		Quick-connect terminal	4 / 11	485A
			5 / 12	485B

*Note: Two pairs of terminals are available for meter connection on X1-Smart G2, and the pins in the same box are a pair.

Three Phase Inverter Models

Table 4-2 SolaX inverter models and pin definition (2)

Inverter series	Terminal Type	Connector type	Pin No.	Pin definition
• X3-HYB G4 • X3-FIT G4 • X3-IES	 Meter/CT	RJ45	4	485A
			5	485B
X3-ULTRA		RJ45	4	485A
			5	485B
X3-MIC G2		RJ45	4	485A
			5	485B
X3-PRO G2		O/I terminal	5	485A
			6	485B
• X3-MEGA G2 • X3-FORTH		Quick-connect terminal	7	485A
			8	485B
X3-AELIO		RJ45	4	485A
			5	485B
X3-HYB G4 PRO		RJ45	4	485A
			5	485B

5 Cable Requirements

Table 5-1 Required cables and specification

Usage	Terminal marking	Cable type (Recommended)	Sectional area (mm^2)	Outer diameter (mm)	Prepared by
Voltage cable	L1, L2, L3	Multi-core outdoor copper wire	1.5~2.5	3~5	User
	N				
CT cable	8~1 Grid → Load	/	/	/	Supplier
COM cable	RS485A	Two-core outdoor shielded twisted pair cable	0.25~1.5	4~11	Supplier
	RS485B				
	RJ45	CAT6	/	/	

6 Electrical Connection

Power Cable Connection

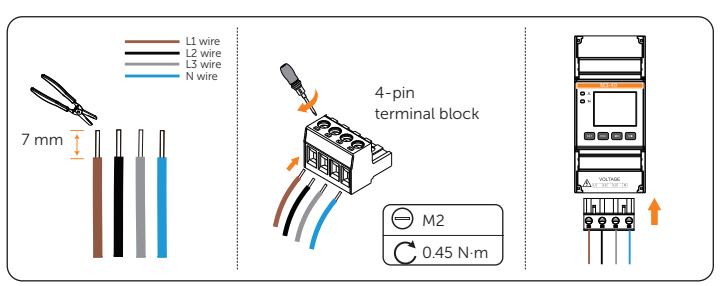


Figure 6-1 Connecting power cables

CT Connection

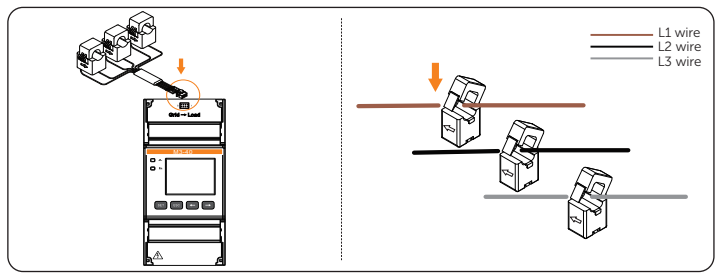


Figure 6-2 Connecting CT cables

Communication Cable Connection

Select either terminal to connect communication cable for the meter.

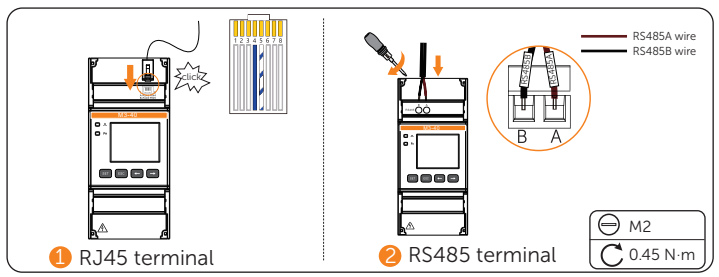


Figure 6-3 Connecting communication cables

7 Installation

NOTICE

Connect all cables for the meter before mounting it onto the rail.

M3-40 is designed to be installed on the 35 mm DIN rail inside the power distribution box.

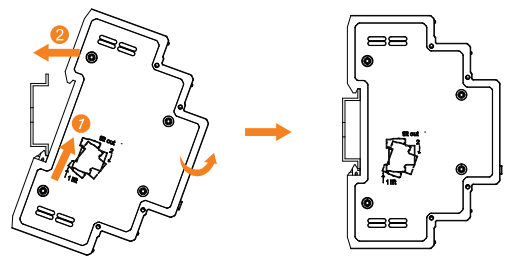


Figure 7-1 Mounting M3-40

8 Technical Data

Table 8-1 Specification

Power grid type	3P3W/3P4W
Rated voltage	3*220/380V...3*240/415V
Operating voltage	100 V~280 V
Current	*A/40 mA
Recommended CT specification	100 A/40 mA; 200 A/40 mA; 400 A/40 mA; 600 A/40 mA; 1000 A/40 mA;
Power consumption	<1.2 W
Measurement accuracy class	Voltage and current: Class 0.5 Active power: Class 1 Reactive power: Class 2
Resolution requirement	Active power: 0.1 W Frequency: 0.001 Hz
Frequency	45 Hz~65 Hz
Frequency tolerance	0.01 Hz
Operating temperature	-40°C to +70°C
Operating humidity	≤95% , non-condensing
Operating altitude	<4000 m
Degree of protection	IP20
Dimensions (W × H × D)	45 mm × 100 mm × 65.5 mm