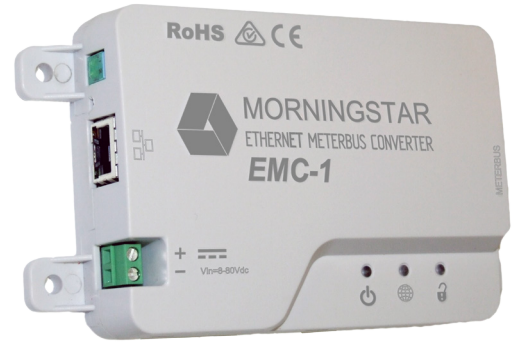


ETHERNET METERBUS CONVERTER™

The Ethernet MeterBus Converter (model: EMC-1) enables IP based network and internet connectivity to any Morningstar product that features an existing MeterBus port (RJ-11) including:

- PWM controllers: TriStar and SunSaver Duo
- MPPT controllers: TriStar MPPT, ProStar MPPT, and SunSaver MPPT
- Inverters: SureSine

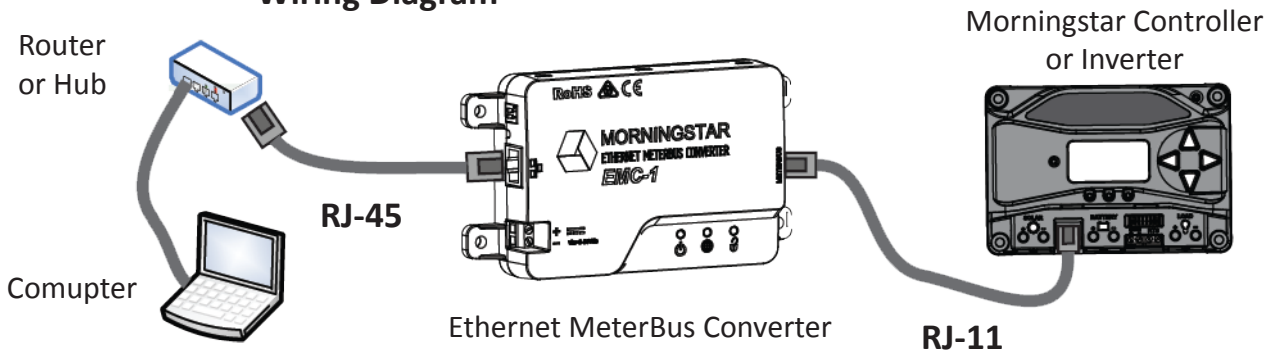


The EMC-1 is powered by connecting it to the Morningstar product's MeterBus port and the DC input for 12, 24, or 48V systems. The MeterBus port connection enables transmission of serial data to the EMC-1. The EMC-1 converts this connection to a fully enabled Ethernet port to allow data transfer to the internet. This facilitates remote monitoring, configuration, and control using any type of IP based network connection. Thus, many new powerful integration options for Morningstar products can be established in remote power systems.

KEY FEATURES AND BENEFITS

- IP based MODBUS connectivity for remote communication and control.
- Remote configuration of controller settings.
- Morningstar's Live View displays system status and log data directly from the EMC-1 to a webpage.
- A cloud hosted data service is scheduled for launch at the end of 2016.

Wiring Diagram



Live View

The screenshot shows the Morningstar Live View interface for a Prostar MPPT controller. The browser address bar shows 'psmpppt16010087/'. The interface includes a navigation menu with 'Live View', 'Network', 'Data Log', and 'System'. The main content area displays system status in four panels:

Array		Battery	
Array Voltage	30.09V	Charge State	MPPT
Sweep Vmp	29.81V	Battery V	13.95V
Sweep Voc	36.58V	Target V	14.40V
Sweep Pmax	487 W	Charge Current	34.90A
Load		Errors	
Load State	ON	None	
Load Voltage	13.94V		
Load Current	9.80A		

TECHNICAL SPECIFICATIONS

Mechanical

- Dimensions 15.3 x 8.60 x 3.0 cm
6.04 x 3.37 x 1.2 in
- Weight 0.13 kg / 0.28 lbs

Environmental

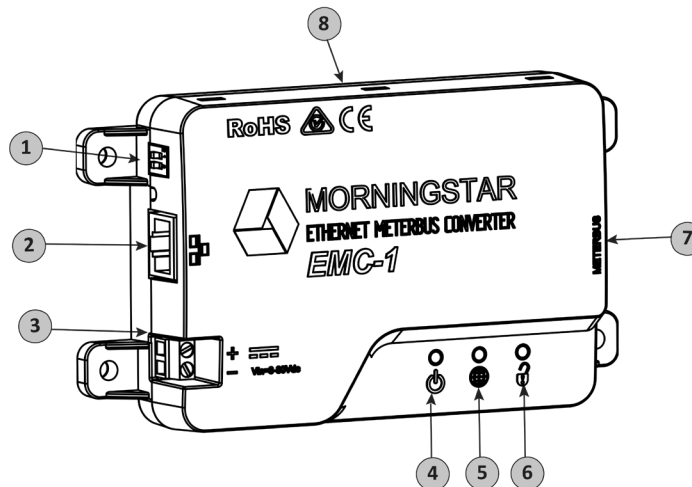
- Operating Temperature Range -40°C to +60°C
- Storage Temperature Range -55°C to +80°C
- Humidity 100% non-condensing

Electrical

- DC Input Supply Voltage Range 8-80 Vdc
- Maximum Self-consumption 2 Watts

Data & Communications

- Communication ports MeterBus (RJ-11)
Ethernet (RJ-45)
- COM Protocols MODBUS Serial
MODBUS TCP/IP
- Ethernet speed 10/100Base-T



1 - DIP Switches

DIP 1 enables Ethernet write commands.
DIP 2 enables cloud data service (future use)

2 - Ethernet port (RJ-45)

Used to connect the EMC-1 to LAN / Internet

3 - Power Input

8-80 Vdc power input

4 - Status LED

Green and red lights indicate unit status

5 - Web Monitoring Service LED

Green and red LEDs indicate Web Service status (future use)

6 - Ethernet Write LED

Green light indicates Ethernet write command capability

7 - Meterbus (RJ-11 port)

Used to connect the EMC-1 to Morningstar Device

8 - DIN rail mounts (bottom of unit)

35mm standard size

