

COM-B

Communication distributor for large-scale plants with

SUNNY CENTRAL, SUNNY MINI CENTRAL or SUNNY TRIPOWER



Content

The COM-B communication distribution box by SMA Solar Technology AG serves as cabling for all communication components used in large-scale PV plants with Sunny Central, Sunny Mini Central or Sunny Tripower. The compact design of the indoor variant is especially suitable for compact stations.

This document includes the technical data of the communication distribution box and additional information important for planning PV plants with PV inverters produced by SMA Solar Technology AG and COM-B communication distribution boxes.

1 Product Details

- COM-B is a central communication distribution box for a large-scale PV plant. Individual components can be combined variably. This enables you to adapt the communication distribution box to the individual requirements of your large-scale PV plant. The basic equipment of the COM-B includes safety sockets and a 24 V power supply unit. All other components can be ordered from SMA Solar Technology AG.
- The optionally available Sunny WebBox can detect up to 50 nodes. Up to 3 Sunny WebBoxes can be selected. Sunny Central inverters can be connected to the Sunny WebBox, Sunny Mini Central and Sunny Tripower via RS485 using Ethernet. Please use shielded cables with twisted pairs. Use at least a 5/5e category SF/UTP cable as network cable. In the event of large distances between nodes, it is possible to use fibre optic cables. For this purpose, you require the optionally available media converters.
- COM-B is suitable for indoor and outdoor installation. The communication distribution box for outdoor installation is available for wall mounting or on a base. Please observe that grid voltage is required to supply the COM-B.
- Using the optional GSM/GPRS or a 3G-UMTS router enables you to transfer measuring data to the Sunny Portal even from remote locations where there is no DSL or telephone connection. The required external antenna is included within the scope of delivery.
- All routers used by SMA Solar Technology AG allow you to set up virtual private networks (VPN). This enables remote access to the plants for performing remote diagnosis.

1.1 COM-B Variant Matrix for Indoor Installation

"x" = can be combined; "-" = cannot be combined

		Sunny WebBox, Sunny WebBox including Sunny SensorBox									Router			Power Reducer Box		8-port Ethernet switch		RJ-45/LWL converter										
		Not installed	1 Ethernet	1 RS485	2 Ethernet	2 RS485	1 Ethernet, 1 RS485, 1 Sunny SensorBox	2 Ethernet, 1 RS485, 1 Sunny SensorBox	1 RS485, 1 Sunny SensorBox	2 RS485, 1 Sunny SensorBox	3 RS485, 1 Sunny SensorBox	Not installed	GSM/GPRS	DSL, no modem	3G-UMTS router	Not installed	1 device	2 device	Not installed	1 device	2 device	Not installed	1 device/multi mode	2 devices/multi mode	1 device/single mode	2 devices/single mode		
Sunny WebBox, Sunny WebBox including Sunny SensorBox	Not installed										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	1 Ethernet										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	1 RS485										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	2 Ethernet										X	X	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X	
	2 RS485										X	X	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X	
	1 Ethernet, 1 RS485, 1 Sunny SensorBox										X	X	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X	
	2 Ethernet, 1 RS485, 1 Sunny SensorBox										X	X	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X	
	1 RS485, 1 Sunny SensorBox										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	2 RS485, 1 Sunny SensorBox										X	X	X	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X
3 RS485, 1 Sunny SensorBox										X	X	X	X	X	X	-	-	X	X	X	X	X	X	X	X	X	X	
Router	Not installed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	GSM/GPRS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	DSL, no modem	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	3G-UMTS router	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Power Reducer Box	Not installed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	1 device	X	X	X	X	X	X	-	X	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	2 device	X	X	X	-	-	-	-	X	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8-port Ethernet switch	Not installed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	1 device	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	2 device	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
RJ-45/LWL converter	Not installed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	1 device/multi mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	2 devices/multi mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	1 device/single mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	2 devices/single mode	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

1.2 COM-B Variant Matrix for Outdoor installation

"x" = can be combined; "-" = cannot be combined

		Sunny WebBox		Router				8-port Ethernet switch			RJ-45/optical-fiber converter				
		Not installed	1 Ethernet	Not installed	GSM/GPRS	DSL without modem	3G-UMTS router	Not installed	1 device	2 device	Not installed	1 device/multi mode	2 devices/multi mode	1 device/single mode	2 devices/single mode
Sunny Web Box	Not installed			X	X	X	X	X	X	X	X	X	X	X	X
	1 Ethernet			X	X	X	X	X	X	X	X	X	X	X	X
Router	Not installed	X	X					X	X	X	X	X	X	X	X
	GSM/GPRS	X	X					X	X	X	X	X	X	X	X
	DSL without modem	X	X					X	X	X	X	X	X	X	X
	3G-UMTS router	X	X					X	X	X	X	X	X	X	X
8-port Ethernet switch	Not installed	X	X	X	X	X	X				X	X	X	X	X
	1 device	X	X	X	X	X	X				X	X	X	X	X
	2 device	X	X	X	X	X	X				X	X	-	X	-
RJ-45/LWL converter	Not installed	X	X	X	X	X	X	X	X	X					
	1 device/multi mode	X	X	X	X	X	X	X	X	X					
	2 devices/multi mode	X	X	X	X	X	X	X	X	-					
	1 device/single mode	X	X	X	X	X	X	X	X	X					
	2 devices/single mode	X	X	X	X	X	X	X	X	-					

2 Technical Data

2.1 COM-B for Indoor Installation

General Data of the Enclosure

Wall mounting	Yes
Material	Steel plate
Color scheme	RAL 7035 structure

Mechanical Data of the Enclosure

Width x height x depth	400 mm x 800 mm x 300 mm
Weight*	18.5 kg

* Dead weight of the enclosure. The weight increases respectively with the variant-dependent equipment.

Grid connection

Nominal voltage	230 V
Frequency	50 Hz/60 Hz
Nominal current	1 A
Maximum back-up fuse	16.0 A
Connection terminal type*	4-pin terminal

* Clamping range of the cage clamp terminal: 0.05 mm² ... 2.5 mm².

Connecting Optional Components

Digital inputs for Power Reducer Box*	4-pin connection terminal
RS485 for Sunny WebBox*	4-pin connection terminal
RS485 for Sunny SensorBox*	4-pin connection terminal

* Clamping range of the cage clamp terminal: 0.14 mm² ... 1.5 mm². Connecting the cable shield with shield terminal cages.

Basic Equipment

Electric safety sockets*	4
Power supply unit	24 V _{DC}

* A maximum of 6 electric safety sockets are possible, depending on which optional components have been selected.

Variant-Dependent Equipment

GSM/GPRS router*	1 at maximum
DSL router**	1 at maximum
3G-UMTS router*	1 at maximum
Sunny WebBox	3 at maximum
Sunny WebBox with RS485 interface	3 at maximum
Power Reducer Box	2 at maximum
Sunny SensorBox	1 at maximum
8-port Ethernet switch	2 at maximum
Multi or single mode media converter RJ-45/fibre optic cable	2 at maximum

* including external antenna

** without modem

Variant-Dependent Interfaces

Communication	GSM/GPRS/UMTS/DSL/Ethernet/ RS485 communication bus
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Protection Rating and Ambient Conditions

Protection rating*	IP 54
Permissible ambient temperatures	- 20 °C ... +50 °C
Relative humidity**	10 % ... 90 %
Tolerable contamination***	2
Maximum altitude above sea level, AMSL	1 000 m

* according to EN EN 60529

** non condensing

*** according to DIN EN 50178:1197

2.2 COM-B for Outdoor Installation

General Data of the Enclosure

UV resistance	Yes
Base installation*	Yes
Wall mounting*	Yes
Material	Fibre glass reinforced polyester
Color scheme	RAL 7035 light gray, solid-colored
Lock cylinder (double-bit) with switch cabinet key**	Yes
Cable support rail***	Yes

* optional

** prepared for customer mounting

*** only for base mounting

Mechanical Data of the Base

Width x height x depth	940 mm x 780 mm x 310 mm
Burial depth	600 mm
Weight	21 kg
Total weight, enclosure and base*	56 kg

* Deadweight of the enclosure and base. The weight increases respectively with the variant-dependent equipment.

Mechanical Data on the Enclosure

Width x height x depth	750 mm x 500 mm x 320 mm
Weight*	35 kg

* Dead weight of the enclosure. The weight increases respectively with the variant-dependent equipment.

Grid connection

Nominal voltage	230 V
Frequency	50 Hz/60 Hz
Nominal current	0.5 A
Maximum back-up fuse	16.0 A
Connection terminal type*	4-pin connection terminal

* Clamping range: 0.05 mm² ... 2.5 mm².

Basic Equipment

Number of electric safety sockets	3
Power supply unit	24 V _{DC}

Variant-Dependent Equipment

GSM/GPRS router*	1 at maximum
DSL router**	1 at maximum
3G-UMTS router*	1 at maximum
Sunny WebBox	1 at maximum
8-port Ethernet switch	2 at maximum
Multi or single mode media converter RJ-45/fibre optic cable	2 at maximum

* including external antenna

** without modem

Variant-Dependent Interfaces

Communication	GSM/GPRS/UMTS/DSL/Ethernet/ RS485 communication bus
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Protection Rating and Ambient Conditions

Protection rating*	IP 54
Permissible ambient temperatures	- 20 °C ... +50 °C
Relative humidity**	10 % ... 90 %
Tolerable contamination***	2
Maximum altitude above sea level, AMSL	1 000 m

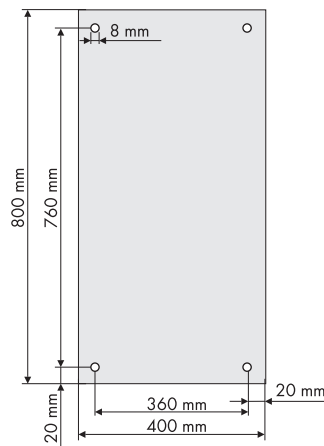
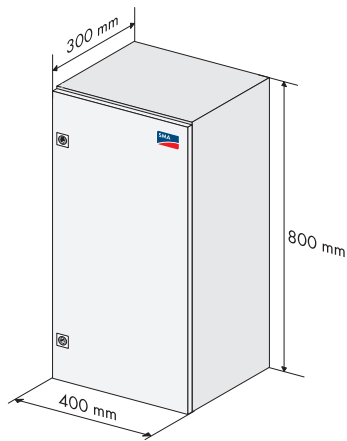
* according to EN EN 60529

** non condensing

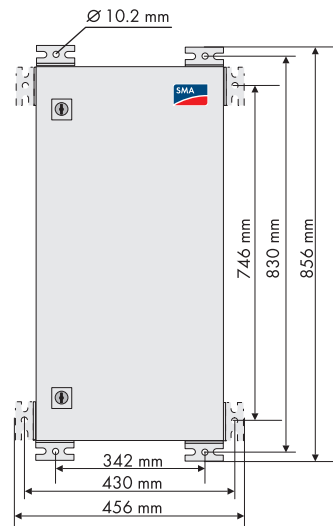
*** according to DIN EN 50178:1197

3 Dimensions

3.1 Indoor installation

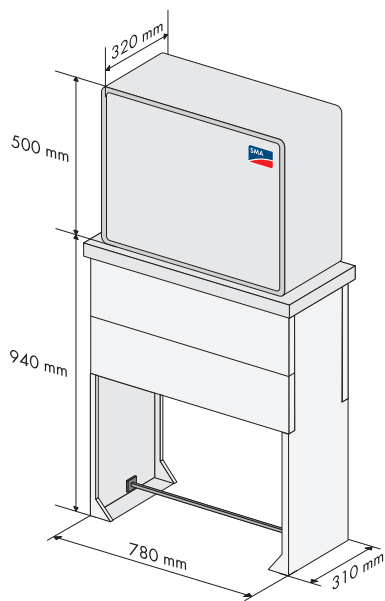


without wall mounting bracket

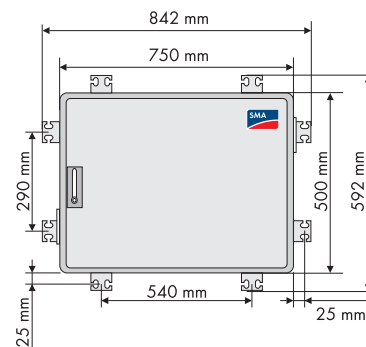


with wall mounting bracket

3.2 Outdoor installation



Base mounting



Wall mounting