







Technical Data

Nominal voltage	12 / 24 V, automatic recognition
Absorption voltage	14.4 / 28.8 V (25 °C), 0.5-2h
Equalization voltage	14.8 / 29.6 V (25 °C), 2 h
Float voltage	13.7 / 27.4 V (25 °C)
Load disconnect voltage	11.0-12.2 / 22.0 -24.4 V depending on setting
Load reconnect voltage	12.8 / 25.6 V
Temperature compensa- tion	-4 mV/cell*K
Max. solar panel current	10 / 20 / 40 A according to model number @ 25 °C (without load current at 50 °C)
Max. load current	10 / 20 / 40 A according to model number @ 25 °C (without solar current at 50 °C)
Dimensions	89 x 90 x 38 mm (w x h x d)
Weight	CXN10, CXN20: 175 gr, CXN40: 186gr
Max. wire size	16 mm ² (AWG #6)
Self consumption	6 mA
Ambient temperature range	-25 to + 50 °C
Case protection	IP 22

Subject to change without notice. Version: 20071206

Programming your RO

You enter the programming mode with a long push (2s-8s) on the button.

The programming menu structure is described as below.

Menu 1: Battery type

In this menu, you can select the proper battery type - liquid electrolyte or GEL (VRLA) according to your PV system to get better charge of your battery.

The default battery type is liquid electrolyte.

Menu 2: Low voltage disconnect

In this menu, you can set 5 different LVD modes to protect the battery from being deep discharged. Please see section DESCRIPTION OF FUNCTIONS for details.

The default low voltage disconnect (LVD) setting is Mode 1 - Disconnect at 11.4 V (at nominal load current) up to 11.9 V (at no load current).

Menu 3: Nightlight function (type)

In this menu, you can set the type of nightlight function or switch off the nightlight function of your RO controller.

The default setting of nightlight function type is OFF.

Menu 4: Nightlight function (evening settings)

When the nightlight function type is set to EVENING/MORNING mode, you can set the load ON hours after sunset in this menu.

The default load ON hours after sunset is 0 hr.

Menu 5: Nightlight function (morning settings)

When the nightlight function type is set to EVENING/MORNING mode, you can set the load ON hours before sunrise in this menu.

The default load ON hours before sunrise is 0 hr.

Menu 6: Day/Night threshold

In this menu, you can set the open circuit voltage of PV panel that the RO controller should know it's day or night.

The default day/night threshold is 4.9V for 12V PV system (9.8V for 24V PV system).

Menu 7: Buzzer on/off

You can turn ON/turn OFF the buzzer in this menu.

Menu 8: Settings of Excess Energy Management and datalogger

To use ROI or ROM1, the functions of RO interface should be properly set in this menu.

Menu 9: Individual / factory settings

You can save your current menu setting or reset to default factory setting in this menu.

Programming logout

When you exit programming menu, the controller displays the state of charge (available energy) of the battery and the status of the load.

Mind that once you have entered the programming menu you can exit it at the last item only.

We therefore recommend that you first note down your required settings in the check boxes beside the menu structure and then do the programming in one go. This makes programming easier and avoids errors.

All programming settings are stored in a non-volatile memory and remain stored even if the controller was disconnected from the battery.

Error Description

Error condition	Display	Reason	Remedy
Loads are not supplied		Battery is low	Load will reconnect as soon as battery is recharged.
	 Flashes	Overcurrent / Short circuit of loads	Switch off all loads. Remove short circuit. Controller will switch on load automatically after max 1 minute.
	 Flashes	Controller is thermally overloaded and has disconnected the loads.	Check proper ventilation of controller. After cooling down the loads are reconnected automatically.
	 Flashes	Battery voltage too high (>15.5 / 31.0 V)	Check if other sources overcharge the battery. If not, controller is damaged.
		Battery wires or battery fuse damaged, battery has high resistance	Check battery wires, fuses and battery.
Battery is flat after short time		Battery has low capacity	Change battery
Battery is not being charged during daytime	No up-moving bars	Solar array faulty or wrong polarity	Check Solar array and wiring
Battery wrong polarity	Permanent sound	Battery is connected with reverse polarity	Remove reverse polarity
Controller limits solar current	 Flashes	Controller is thermally overloaded	Mount controller at a location with better ventilation
		Solar array exceeds nominal current of controller.	Check solar array current.