

# "All In One" CBI series: Uninterruptible Power Supply with DC output

Thank you for having chosen one of our products for your work.

We are certain that it will give the utmost satisfaction and be a notable help on the job.

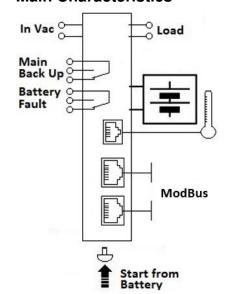
## **General Description**

Thanks to "All In One" CBI series of DC-UPS, it will be possible to optimize the power management of your system with one single, extremely compact and cost-effective device, connected directly to the mains. The available power is automatically distributed between load and battery giving priority to the load. Battery can supply the load even with mains so the output power to the load can be twice the nominal power if it is required (Power Boost). When mains failure



occurs, the load continues to be supplied by the battery in backup mode. It is also possible to switch on the device with no mains directly from battery. The "Battery Care" algorithm performs rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnosis during installation and operation. Temperature compensation is possible to connect the temperature sensor probe. The real time auto-diagnostic system monitors battery faults such as sulfated battery, shorted cells, accidental reverse polarity connection or disconnection of the battery. Every fault is signaled by a blink code of Diagnosis Led or via Modbus (only in some models) in order to be easily detected and removed during the installation and after sales. The continuous monitoring of battery efficiency reduces risk of battery damage and allows a safe operation in permanent connection. Predefined curves can be selected by jumpers or DIP switch to optimize the charge of different battery types: Open Lead Acid, AGM and Gel Lead Acid; Ni-Cd are rechargeable in the same device. Charging curves can be customized via Modbus (only in some models). Output dry contacts are used to signal both backup and fault conditions. A rugged casing with bracket for DIN rail mounting provides IP20 protection degree.

## **Main Characteristics**



- Universal input voltage: single-phase 115-230-277 Vac
- Load output:24 Vdc 3,5,10,20A; 12 Vdc 3,6,10,15,35A 48 Vdc 5,10A
- Battery output:24 Vdc 3,5,10,20A; 12 Vdc 3,6,10,15,35A; 48 Vdc 5,10A
- "All In One" solution: power supply + battery charger + backup module in one single device connected directly to the mains
- Suited for different battery types: Open Lead Acid, Sealed Lead Acid, AGM and Gel Lead Acid; Ni-Cd and Li-ion are available as options. Four stage charging curve for Lead Acid batteries: 5-stage IUoU (Recovery, Bulk, Absorption, Float, Refresh Battery) plus Recovery stage for deeply discharged batteries
- Automatic diagnosis of battery status and battery Life Test function (Battery Care)
- · Switching technology with high efficiency
- Protected against short circuit, overload and inverted polarity
- Output dry contact for signaling Low Battery or Battery Replacement and Fault system
- · Output dry contact for signaling Mains or Backup
- IP20 protection degree
- Space saving on DIN rail

## Safety and warning notes

**WARNING** – Explosion Hazard Do not disconnect Equipment unless power has been switched off or the area is known to be non-hazardous.



**WARNING** – Explosion Hazard. Substitution of components may impair suitability for class I, Division 2.

**WARNING** – Switch off the system before connecting the module. Never work on the machine when it is live. The device must be installed in according with UL508 or UL60950. The device must have a suitable isolating facility outside the power supply unit, via which can be switched to idle. Danger of fatal Injury!

## Connection (terminal and wiring):

**Cable Connection:** The following cable cross-sections may be used:

	Solid (mm²)	Stranded (mm²)	AWG	Torque (Nm)	Stripping Length	All In One (Size)	1 Phase L N PE Input AC	1 Phase L N PE Input AC
ln:	0.2 - 2.5	0.2 - 2.5	24 – 14	0.5 – 0.6 Nm	7 mm	Size 1 and 2		L
ln:	4.0	6.0	30 – 10	0.8 – 1.0 Nm	7 mm	Size 3 and 4	PE IN L	PE N L
Out	0.2 - 2.5	0.2 - 2.5	24 – 14	0.5 – 0.6 Nm	7 mm	Size 1 and 2	AC ,	AC
Out	4.0	6.0	30 – 10	0.8 – 1.0 Nm	7 mm	Size 3 and 4	~ /   +	~ /   +
Signal:	0.2 - 2.5	0.2 – 2.5	24 – 14	0.5 – 0.6 Nm	7 mm	All types	DC -	DC —

The connection is made by the screw type 2.5 mm<sup>2</sup> or 4.0 mm<sup>2</sup> terminal blocks. Wiring terminal shall be marked to indicate the proper connection for the power supply. Use copper cables only, for supply connections, use wires suitable for at least 75°C.

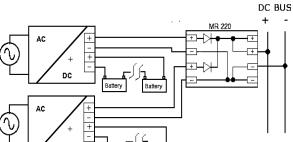
## **Normal connection**

Typical application for All In One device, one output for Load "DC Bus", one Input / Output for connection to the battery.

N°1 battery (12 Vdc) for CBI 12xx;

N°2 battery (12 Vdc) connected in Series for CBI 24xx;

N°4 battery (12 Vdc) connected in Series for CBI 48xx;

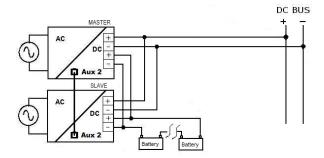


# Parallel connection "Redundancy"

Parallel connection "Redundancy"

Power supplies can be paralleled in case of redundancy concept, to obtain a higher system reliability. Redundant systems may support N+1 redundancy to safeguard against single-point failures, or to enable hot-swapping of a failed supply without system impact. The simplest way is to put two CBI in parallel. In case one power supply unit fails, the other one is automatically able to support the load current without any interruption. To isolate completely the ipotetic device fail, it is necessary add the decoupling diodes which are included in the

Redundancy Module MR220. Recommendations for building redundant power systems: a) Use separate input fuses for each CBI. b) Monitor the individual CBI units by three LED. Each unit has two relays: Mains or backup and Low Battery or Battery Replacement (faulty situation). This feature reports a faulty unit; see Relay Contact Rating for any technical detail. c) When possible, connect each power supply to different phases or circuits.



## Parallel connection "Double Power"

Power supply can be paralleled to increase the output power, devices can be paralleled for 1+1=2 to obtain the double power of a single unit. The possibility to put in parallel connection it is only in SIZE 3 devices in the specific "P" version (i.e.CBI1235AP, CBI2420AP, CBI4810AP), to be reach the sum of the current at the same output voltage. It is necessary to use a standard UTP or order Cable code: ERJ.CBI.004 for RJ45, and connect by Aux2 of each device. The communication protocol is based on CAN2.0A standard.

In this way the system has only One output for the Load and One output for the battery.

- a) Use separate input fuses for each CBI.
- b) Make sure that the two CBI have the same settings: Battery type, Charging level current, Time buffering, Life test...
- c) Automatic configuration, Master-Slave. The devices decide themselves Master and Slave assignment random. The assignment become able every power on, or after the connection of the cable RJ45. Master device give you all the visual signals, the Slave device maintain diagnosis LED always ON.
- d) Use the alarm contacts of both the two devices and deliver them at will.
- e) For Start Battery there are two way, without mains voltage:
- push start button on both units
- connect Cable "RTCONN" on position 5, to connect pushbutton on a front panel.

# DC BUS + Battery Battery Battery Battery Battery

## Series connection:

It is possible to connect as many units in series as needed, providing the sum of the output voltage does not exceed 150Vdc. b) Voltages with a potential above 60Vdc are not SELV anymore and can be dangerous. Such voltages must be installed with a protection against touching. c) For serial operation use power supplies of the same type. d) Earthing of the output is required when the sum of the output voltage is above 60Vdc. e) Keep an installation clearance of 10 mm (left/right) between two power supplies and avoid installing the power supplies on top of each other. Note: Avoid return voltage (e.g. from a decelerating motor or battery) which is applied to the output terminals.

# **Output Load (Mains input ON)**

The output Load in normal mode, Mains Input Vac Voltage present, follow the charging battery dc output voltage. The minimum and maximum range stabilized are the following:

CBI 12xx:11 - 14,4 Vdc; 15,5 Vdc for NiCd (Without battery connected out. Voltage fixed at 12Vdc)

CBI 24xx:22 – 28.8 Vdc; 30 Vdc for NiCd (Without battery connected out. Voltage fixed at 24Vdc)

CBI 48xx:44 – 57.6 Vdc; 62 Vdc for NiCd (Without battery connected out. Voltage fixed at 48Vdc)

Thanks to the All In One units, it will be possible to manage the power. The available power, is automatically allocated between load and battery: supplying power to the load is the first priority of the unit; thus it is not necessary to double the power and also the power available for the battery will go to the load if the load requires it.

In "Power Boost Mode" the maximum current on the load output is the 2 times the rated current 2 x In (Iload = In+ Ibatt) in continuous operation and 3 times the rated current 3 x In (Iload = 2In+ Ibatt) for 4 seconds; after this parameter the devices is electrically protected against overload and short circuit.

- In "Power Boost Mode", if the current of the battery generate current to the load for a time more than 4 minutes, the device give message (8 Blink), consequently means that the battery is discharging. If the Mains Input Voltage fall below a Threshold level (50% of the Typ. Vac input) the battery is immediately connected to the Output Load, without any interruption.
- Voltage dips: In this situation the voltage in the output load it is the same of the battery.

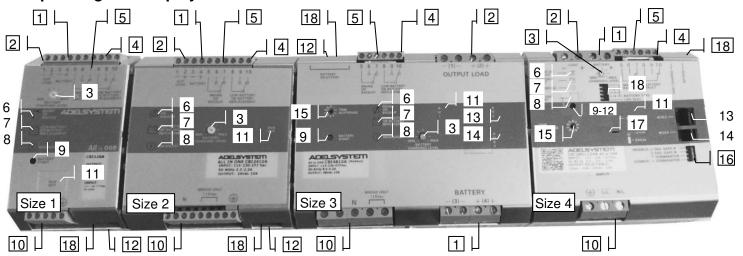
**To Avoid deep battery discharge**, the battery will supply the load until battery voltage reaches 1.5 V/cell. Below this level the device automatically switches off to prevent Deep discharge and battery damage.

# **Output Load In Buffer Mode (Mains Input OFF)**

Some example of buffering time depending on LOAD Output in function to the Ah of the battery.

Buffering Time	BATT1.2 Ah	BATT 3 Ah	BATT7.2 Ah	BATT12 Ah	BATT100 Ah
Load 1.5 A	20 min	60 min	200 min	400 min	/
Load 3 A	8 min	30 min	120 min	240 min	/
Load 5 A	3 min	15 min	55 min	100 min	/
Load 7.5 A	2 min	10 min	30 min	60 min	/
Load 10 A	No	7 min	20 min	45 min	20 h
Load 12 A	No	3 min	12 min	30 min	600 min
Load 15 A	No	No	9 min	20 min	400 min
Load 20 A	No	No	7 min	13 min	240 min

# **Operating and Display Element:**



# No. 1: Battery Connection Port:

Connect the battery between pin. 3 (-) and 4 (+)

One battery (12 Vdc) for CBI12xx;

Two battery (12 Vdc) connected in Series for CBI24xx;

Four battery (12 Vdc) connected in Series for CBI48xx;

# No. 2: Output Load:

Connect this Output to the load 1 (-). 2 (+).

# No. 3: Charging Level Current:



In order to protect the battery from excessive charging currents, the device allows you to limit the maximum charge current by adjusting the trimmer. It allows you to limit from max In up to 20% of current In. To determine the maximum battery charge current, see the battery manufacturer's Data Sheet, If it is not possible, consider that on average the maximum charge current is 10% of Ah's rated battery current; The data is suitable for both Lead Acid and NiCd batteries.

# No. 4, 5 Signal Ports (Output Isolated):

Connections for.

No. 5: MAINS OR BACKUP: Input Mains On/Off. Contact: 5, 6, 7

No. 4: LOW BATTERY, BATTERY REPLACEMENT, FAULT BATTERY or FAULT SYSTEM Contact: 8,9,10

## **Relay Contact Rating:**

Max.DC1: 30 Vdc 1 A; AC1: 60 Vac 1A: Resistive load (EN 60947-4-1)

Min.1mA at 5 Vdc: Min. permissive load

Signal Output port true table:			i - Led N°6 Back-Up	Port N°4 - Led N°7 Fault Battery		
		5-6 Closed	5-7 Closed	8-9 Closed (OK)	8-10 Closed	
Maina Innut Vaa	ON	■ - led off		■ - led off		
Mains Input Vac	OFF		■ - led On (1)	■ - led off		
The battery in BackUP it is less than	YES		■ - led On		■ - led On (2)	
30% cap?	NO		■ - led On	■ - led off	, ,	
Battery or system	YES	■ - led off			■ - led On	
Fault?	NO	■ - led off		■ - led off		

### Note:

- (1) Contact relay Mains/Back switch at least 5 seconds after disconnection of Power.
- (2) See Diagnosis Led

# No. 6, 7 and 8 Display Signals

No.6: Led MAINS OR BACKUP: Input Mains On/Off

No.7: Led LOW BATTERY (capacity less than 30%), BATTERY REPLACEMENT, FAULT BATTERY or FAULT SYSTEM.

No.8: Led DIAGNOSIS: Battery charge mode,

Led Diagnosis. Diagnosis of the system through "blinking code" signal Light

State of Charge

Monitoring Control Chart:	State	Led DIAGNOSIS (No.8)	LED BATTERY FAULT (No.7)
Chavaina	Float	1 Blink/2 sec	OFF
Charging Type	Absorption	1 Blink/sec	OFF
туре	Boost	2 Blink/sec	OFF
	Recovery	5 Blink/sec	OFF

Fault Battery / Fault System

i ddit Buttery / i	aut eyetetti		
	Reverse polarity or high battery Voltage (over 32.5Vdc for CBI 24xxA)	1 Blink/pause I	ON
	Battery No connected	2 Blink/pause л	ON
	Element in Short Circuit	3 Blink/pause JIL	ON
	Over Load or short circuit on the load	4 Blink/pause	ON
Custom	Bad battery; Internal impedance Bad or Bad battery wire connection	5 Blink/pause JML_	ON
System	Life test not possible	6 Blink/pause JML	ON
Auto Diagnosis	Boost condition; battery discharge after 4 min. of overload.	8 Blink/pause JML	ON
Diagnosis	Internal fault	9 Blink/pause JML	ON
	Low battery (under 18.5Vdc for CBI 24xxA) Only if started from battery, no Mains input, from Jumper N°5 or Push Bottom	10 Blink/pause JML	ON
	MODBUS error	11 Blink/pause JML	ON
	Life test not possible; Parallel mode on Slave Device	12 Blink/pause JML	ON
	Bad battery wire connection; Parallel mode on Slave Device	13 Blink/pause JML	ON
	Boost condition; battery discharge after 4 min. of overload; Parallel mode on Slave Device	15 Blink/pause JML	ON

## No. 9, 12: Start from Battery Only; No Mains Vac

No. 9: Push-bottom, for 3 sec., in the front panel for switch ON the system without the "Mains input Vac" but only the battery connected. (Not present in CBI 2410XX and CBI 485XX)

No.12: (Jumper n.5) It is also available the same function for remote start from the battery, via RTCONN cable connected in the Push-bottom mounted on front Panel of the external system. Standard function for all products, Size 2 only with code CBI2410A/S and CBI485A/S. Do not leave jumper in this position, otherwise the system will discharge completely the battery. Only push bottom.

# No. 10: Input AC Port pin. L - N:



1 Phase Switching Power Supplies L, N, PE <sup>⊕</sup> .

Size 2 and Size 3 BRIDGE ONLY for input 115 Vac, and connect L, N, PE .

# No. 11: Auxiliary Output "AUX 1"

Remove the window label to find the connector.

It is possible to connect the Temperature sensor probe and apply it on the battery. The function of the probe is for temperature battery compensation. With this it is possible to active the specifications of the EN54-4 fire norm.

Size 1,2,3 Size 4

## **Battery Temperature Compensation Charge (not for NiCd)**

Connecting to Auxiliary Output AUX1 the cable RJTEMP (supplied separately), the CBI will vary the voltage of battery charging depending on the temperature:

Fast Charge	Float charge
+/-5mV/°C x n. of Cells from -8°C to +60°C	+/-3mV/°C x n. of Cells from -20°C to +60°C
+140mV/Cell ÷ -200mV/Cell compared to the value	+120mV/Cell ÷ -120mV/Cell compared to the
at 20°C	value at 20°C

The device stops to charge the battery If the temperature is less than -20°C or greater than +60°C. The alarm fault battery could be signalled by 7 blink code.

The sensor placed on cable RJTEMP must be applied on the battery.

# No. 13: Auxiliary Output "AUX 2"

Present only in Sizes 3 and Sizes 4, connection MODBUS via RJ45 connector. See instruction MODBUS communications protocol. (CANBUS to be implemented).

# No. 14: Auxiliary Output "AUX 3"

Present only in Sizes 4. The function is the same of Auxiliary Output "AUX 2"

# No. 15: Buffering Time Setting (Size 3-4)

On models Size 3 and Size 4 is possible to set a buffering time. It can be selected by setting the desired value on the rotary switch 15. Buffering time is initiated when the mains is switched OFF. The LOAD output will be ON for the selected time.

Switch position	0	1	2	3	4	5	6	7	8	9
Buffering Time (min.)	∞	0.5	2	5	10	15	20	30	45	60

If the switch is in position 0, the LOAD output will be in ON state until the battery is completed discharged. Any way to prevent damage risks, the unit disconnects the batteries when a minimum voltage level is reached.

The LOAD output will be in ON state until the battery it is completed discharged. It is however possible to request factory customized versions with specific buffering time setting, for units Size 1 or 2, you have two choose the extension CBIxxxxATBx.

## No. 16: Bus Termination (Size 4)

Read the MODBUS/CANBUS instruction manual to learn about the operational functions available. Dip Switch Setting always active during all states of the system.



## No. 17: Select Output Voltage (Size4)

Caution: Switch off the system before Setting the Jumper

Output Voltage Selection	- 24 Vdc	24 Output Voltage
Output Voltage Selection	- 12 Vdc	12 Output Voltage

# No. 18: Battery Management Configurations (Sizes 1,2,3,4)

Preliminary Operations: One device for all battery types.

Completely automatic, all devices are suitable to charge most batteries types thank to User Selectable charging curves. They can charge open lead acid, sealed lead acid, Gel, Ni-Cd and Li-lon. It is possible to change or add other charging curves connecting the device to a portable PC.

Caution: Switch off the system before Setting the jumper. Only jumper in position 6 is Refreshed also with power ON.



Don't use Ni-Cd charging configuration in battery less than 7 Ah.

Battery Type Sele	ction (Only for	CBI485A and	d CBI485A/S)			
	Jumper Position (Size 1)	Jumper Position (Size 2)	Jumper Position (Size 3)	Dip Switch Position (Size 4)	Float charge (Volt/Cell)	Fast charge (Volt/Cell)
Open Lead		12346			2.23	2.40
AGM Low		12346			2.25	2.40
AGM High		12346			2.27	2.40
Gel Battery		12346			2.30	2.40

Battery Type cher	mistry Selection	1				
	Jumper Position (Size 1)	Jumper Position (Size 2)	Jumper Position (Size 3)	Dip Switch Position (Size 4)	Float charge (Volt/Cell)	Fast charge (Volt/Cell)
Open Lead	1234 5 6	12346	12347 5 6	1 2 3 4 5 6 6 ON	2.23	2.40
(AGM) Low	1234 5 6	12346		1 2 3 4 5 6 ON	2.25	2.40
Gel Battery	123456	12346	12347 5 6	1 2 3 4 5 6 ON	2.30	2.40
NiCd	1234 5 6	12346	12347 5 6	1 2 3 4 5 6 ON	1.4V/cell (12V:10 cells) (24V:20 cells) (48V:40 cells)	1.5V/cell (12V:10 cells) (24V:20 cells) (48V:40 cells)
Li-lon	1234 5 6	12346	12347 5 6	1 2 3 4 5 6 ON	3.45 (12V:4 cells) (24V:8 cells)	3.65 (12V:4 cells) (24V:8 cells)
Custom Charging Config (6)			12347 5 6	1 2 3 4 5 6 ON	Config by DI ADELView	

Functional Setting	ng				Function
Battery Life test ON	1234 5 6	12346	12347 5 6	1 2 3 4 4 5 6 6 ON	Jumper present or dip switch ON: Life test enabled (not for NiCd)
Fast Charge Enable (3)	1234 5 6	12346	12347 5 6	FAST CHARGE OPTION	Jumper present: Fast Charge enabled. It is possible remote Fast Charge enabling by RTCONN cable
"Start from Battery" (without Input Mains) (1)	1234 5 6	1234 6	12347 5 6	BATTERY START	Switch ON the system without the "Mains In Vac", only the battery is connected. For connection to external Push button use RTCONN cable
UPS Disabling (2)	1234 5 6			FAST CHARGE J OPTION	If jumper removed: UPS function disabled Use RTCONN cable for connection to external Contact.

## Notice:

- 1 Do not leave the jumper in position 5 (Size 1, 3) or position 6 (Size 2) or Battery Start (Size 4); otherwise, in Backup mode, the battery discharges completely close to Zero. For Size 2: must be require CBI2410A/S or CBI485A/S (/S means start with battery functions, otherwise only start with Input Mains)
- 2 CBI245ASDXX Replaces the fast charge in:
  - <u>Closed contact</u>: back-up (UPS) enabled.
     System shut down after 30 sec. from Low Battery Detection
  - Contact open: Inhibit backup function. No UPS enabled.

## CBI2801224A

- Closed contact: back-up (UPS) enabled
- Open contact: Inhibit backup function. No UPS enabled.
- 3 Jumper present in Fast Charge means also that every 288h, the device goes in "Cycling Refresh Charging". This mode continues for 85 minutes at the same voltage condition: 2.4V/Cell; for Lead Acid Batteries.
- 4 Please note that it is possible to use lithium-charging curve just with a single BMS Battery. From the release:

**Size1**:12Vdc Output: S13 R6; 24Vdc Output: S13 R7 **Size2**: 24Vdc Output: S92 R3 **Size3**:12Vdc, 24Vdc, 48Vdc Output: S40 R13 **Size4**: S130 R5

- By DPY351 or ADELViewsystem it is possible configure a Customized Charging Curve. After programming it is possible disconnect the programmer and use the device as standalone device.
- 6 Whit this selection it is possible to change the parameters of the chemistry selected.
  - a. First, you have to select the battery chemistry
  - b. Select "Custom Charging Config".
  - c. Change the parameters with DPY351

Note: If you remove the "Custom Charging Selection" all parameter came back to default chemistry selection

# **Battery Care**

The Battery Care philosophy is based on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. Elements in short circuit, accidental reverse polarity connection, disconnection of the battery, can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. Each device is suited for all battery types, it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (option). They guarantee battery reliability in time by continuously testing the internal impedance status, avoids any possible risk of damages and grants a permanent, reliable and safe connection of the battery to the power supply. The system, through a battery stimulation circuit with algorithms of evaluation of the detected parameter, is able to recognize sulphated batteries or batteries with a short-circuited element. Battery Test: Automatic. Every 60 sec. check battery connection. Every 220 minute in Float charge, make the test of the battery efficiency. The Battery Fault will be monitored by relay and led blinking.

## Diagnostic Type Checks:

# Check for accidental disconnection of the battery cables:

All In One detects accidental disconnection and immediately switched off the output power.

## **Battery not connected:**

If the battery is not connected no output power.

## Test of quality wire connections:

During Float charge the quality (resistance) on the battery connection is checked every 60 sec. This to detect if the cable connection has been properly made.

## **Battery in Open Circuit or Sulphated:**

In Float charging mode, the All In One performs internal impedance test every 220 minutes.

# **Reverse Polarity check:**

If the battery it is connected with inverted polarity, All In One is automatically protected.

## Test of battery voltage connections:

Appropriate voltage check, to prevent connection of wrong battery types, more or less than the nominal voltage.

## End of Charge check

When the battery is completely fully charged, the device automatically switch in Float charging mode.

## Check for Battery Cells in short circuit

Thanks to specific algorithms of evaluation, the CBs recognize batteries with cells in internal short circuit.

In Float charge every 220 minutes test of element in short circuit.

## Diagnosis of battery and device

All CBI devices support the user during installation and operation. A Blink code of Diagnosis Led allows to discriminate among various possible faults.

Error conditions, "LED Battery Fault" ON and "LED Diagnosis" blinking with sequence; see Display Signal section.

## **Protection Features**

On the primary side: the device is equipped whit an internally fuse. If the internal fuse is activated, it is most probable that there is a fault in the device. If happen, the device must be checked in the factory.

On the secondary side Battery and load: The device is electrically protected against short circuits and overload.

**Inversion polarity:** the module it is automatically protected against inversion of battery polarity and connection of load inverted.

Over current and output short circuit: the unit limits the output current (see the technical data).

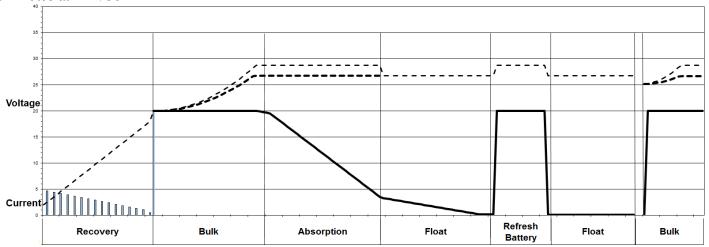
Deep discharge: not possible. The unit disconnects the battery when a minimum voltage level is reached.

#### Thermal behaviour

Surrounding air temperature 50°C. For ambient temperature of over 50°C, the output current must be reduced by 2.5% per °C. Max 70°C At the temperature of 70°C the output current will be 50% of In. The equipment does not switch off in case of ambient temperature above 70°C or thermal overload. The devices are protected for Over temperature conditions "worst case"; in this situation the device Shut-down the output and automatic restart when temperature inside fall.

# **Charging Curve**

Automatic multi-stage operation and real time diagnostic allows fast recharge and recovery of deep discharged batteries, adding value and reliability to the system hosting the CBI device. The type of charging is Voltages stabilized and Current stabilized IUoU. Five charging phases are identified by a flashing code on a Diagnosis LED. To maintain the Output Load in lower Voltage state, don't put jumper in position 6, in this case no boost charge but only Float charge. Fast/Bulk Charge means also that every 288h, the device goes in "Cycling Refresh Charging" for 85 minutes at 2.4V/CeII.



## **Standard and Certifications**

## **Electrical Safety for Mounting:**

Device assembling: UL508, IEC/EN 60950 (VDE 0805) and EN 50178 (VDE 0160). Installation according: IEC/EN 60950. Input / Output separation: SELV EN 60950-1 and PELV EN 60204-1. Double or reinforced insulation. Safety of Electrical Equipment Machines: EN 60204-1.

 $\mathbf{C}$  In According to EMC 2014/30/UE and Low voltage directive 2014/35/UE

## **EMC Standards Immunity:**

EN 61000-4-2, EN 61000-4-3, EN 61000-6-2, EN 61000-4-4, EN 61000-4-5.

## **EMC Standards Emission:**

EN 61000-6-4, EN 61000-6-3, EN 61000-3-2 (see data sheet for each device)

## Conformity to:

EN60950/UL60950-1 and CSA C22.2 No. 60950-1-07 (Information Technology Equipment) - Safety - Part1: General Requirement.

Device is intended to be installed in a cabinet protected from external shocks or damages.

IEC/EN 60335-2-29 Battery chargers

Electrical safety EN54-4 Fire Detection and fire alarm systems

DIN41772: Charging curve; DIN41773: Characteristic Curve for charging Lead Acid and Nickel-Cadmium batteries.

## Approved:

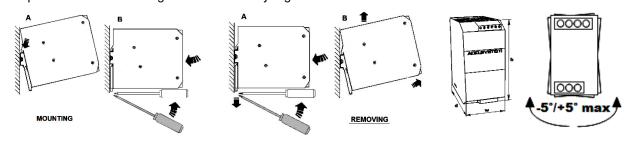
Devices, CBI243A, CBI245A, CBI123A, CBI126A, CBI1210A,

EN60950 / UL60950-1 and CSA C22.2 No. 60950-1-07 (Information Technology Equipment) - Safety - Part1: General Requirement.

## **Rail Mounting:**



All modules must have a minimum vertical and horizontal distance of 10 cm to this power supply in order to guarantee sufficient auto convection. Depending on the ambient temperature and load of the device, the temperature of the housing can become very high.





DC Ups - All in ONE	12/24Vdc			12V	dc		24	Vdc		4	www.adelsystem.com
					The state of the s			Total Control of the	Con-		The state of the s
Input (Volt)	115 - 230 - 277Vac 12-24V /15-10A /280W	115 - 230 - 277Vac 12Vdc - 3A - 36W	115 - 230 - 277Vac 12Vdc - 6A - 72W	115 - 230 - 277Vac 12Vdc - 10A - 120W	115 - 230 - 277Vac 12Vdc - 35A - 420W	115 - 230 - 277Vac 24Vdc - 3A - 72W	115 - 230 - 277Vac 24Vdc - 5A - 120W	115 - 230 - 277Vac 24Vdc - 10A - 240W	115 - 230 - 277Vac 24Vdc - 20A - 500W	115 - 230 - 277Vac 48Vdc - 5A - 240W	115 - 230 - 277Vac 48Vdc - 10A - 500W
Dutput (Vdc – A – W) Reference	12-24V /15-10A /280W CBI2801224A	12Vdc - 3A - 36W CBI123A	12Vdc - 6A - 72W CBI126A	12Vdc - 10A - 120W CBI1210A	12Vdc - 35A - 42UW CBI1235A	24Vdc - 3A - 72W CBI243A	24Vdc - 5A - 12UW CBI245A	24Vdc - 10A - 240W CBI2410A	24Vdc - 20A - 500W CBI2420A	48Vdc - 5A - 240W CBI485A	48Vdc - 10A - 500W CBI4810A
NPUT DATA											
Nominal Input Voltage	115 - 230 - 277Vac 90 - 135Vac	115 - 230 - 277Vac	115 - 230 - 277Vac	115 - 230 - 277Vac	115 - 230 - 277Vac 90 - 135Vac	115 - 230 - 277Vac	115 - 230 - 277Vac	115 - 230 - 277Vac 90 - 135Vac			
Voltage Range	180 - 305Vac	90 - 305Vac	90 – 305Vac	90 – 305Vac	180 - 305Vac	90 - 305Vac	90 - 305Vac	180 - 305Vac	180 - 305Vac	180 - 305Vac	180 - 305Vac
nrush Current (Vn and In Load) I <sup>2</sup> t Frequency	≤ 16 A ≤ 5msec 47 – 63 Hz	≤ 11 A ≤ 5msec 47 – 63 Hz	≤ 11 A ≤ 5msec 47 – 63 Hz	≤ 11 A ≤ 5msec 47 - 63 Hz	≤ 35 A ≤ 5msec 47 – 63 Hz	≤ 11 A ≤ 5msec 47 – 63 Hz	≤ 11 A ≤ 5msec 47 – 63 Hz	≤ 16 A ≤ 5msec 47 - 63 Hz	≤ 35 A ≤ 5msec 47 – 63 Hz	≤ 16 A ≤ 5msec 47 – 63 Hz	≤ 35 A ≤ 5msec 47 - 63 Hz
nput Current (115 – 230Vac)	3.3 – 2.2A	1.91 – 0.96A	1.91 – 0.96A	2.8 – 1.38A	9.0 – 4.5A	1.91 – 0.96A	2.8 – 1.3A	5 – 2.5A	9.0 – 4.5A	5 – 2.5A	9.0 – 4.5A
Internal Fuse	6.3A	4A	4A	4A	10A	4A	4A	6.3A	10A	6.3A	10A
External Fuse (recommended)	16A	10A	10A	10A	16A	10A	10A	16A	16A	16A	16A
Output Vdc /In	12Vdc 15A / 24Vdc 10A	12Vdc - 3A	12Vdc - 6A	12Vdc - 10A	12Vdc - 35A	24Vdc - 3A	24Vdc - 5A	24Vdc - 10A	24Vdc - 20A	48Vdc - 5A	48Vdc - 10A
Dutput Current (In)	15A / 10A	3A	6A	10A	35A	3A	5A	10A	20A	5A	10A
Dissipation Power load max (W) Efficiency (50% of In)	28 > 91%	17 ≥ 90%	17 ≥ 90%	17 ≥ 90%	48 > 91%	13 ≥ 90%	17 ≥ 90%	28 ≥ 83%	48 > 91%	28 ≥ 83%	54 > 91%
Residual Ripple	≤ 80 mVpp	≤ 60 mVpp	≤ 60 mVpp	≤ 60 mVpp	≤ 80 mVpp	≤ 60 mVpp	≤ 60 mVpp	≤ 60 mVpp	≤ 80 mVpp	≤ 80 mVpp	≤ 60 mVpp
Short-circuit protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Over Load protection Over Voltage Output protection	Yes Yes (Typ. 35Vdc)	Yes Yes (Typ. 35Vdc)	Yes Yes (Typ. 35Vdc)	Yes Yes (Typ. 35Vdc)	Yes	Yes	Yes	Yes Yes (Typ. 35Vdc)	Yes	Yes Yes (Typ. 90Vdc)	Yes Yes (Typ. 90Vdc)
Over Voltage Output protection Overheating Thermal Protection	Yes (Typ. 35Vdc)	Yes (Typ. 35Vdc) Yes	Yes (Typ. 35Vdc) Yes	Yes (Typ. 35Vdc) Yes	Yes (Typ. 35Vdc) Yes	Yes (Typ. 35Vdc) Yes	Yes (Typ. 35Vdc) Yes	Yes (Typ. 35Vdc) Yes	Yes (Typ. 35Vdc) Yes	Yes (Typ. 90Vdc) Yes	Yes (Typ. 90Vdc) Yes
LOAD OUTPUT							+		-	+	
Output voltage (at IN) Vdc Start up with strong load (capacitive load)	10 - 14.4Vdc 22 - 28.8Vdc		10 - 14.4Vdc (17Vdc for Ni-Cd) Yes, Unlimited	10 – 14.4Vdc (17Vdc for Ni-Cd) Yes, Unlimited	10 - 14.4Vdc (17 Vdc for Ni-Cd) Yes, Unlimited	22 – 28.8Vdc (31Vdc for Ni-Cd) Yes. Unlimited	22 – 28.8Vdc (31Vdc for Ni-Cd) Yes, Unlimited	22 – 28.8Vdc (31Vdc for Ni-Cd) Yes, Unlimited	22 – 28.8Vdc (31Vdc for Ni-Cd) Yes, Unlimited	44 - 57.6Vdc Yes, Unlimited	44 - 57.6Vdc (62Vdc for Ni-Cd) Yes, Unlimited
Start up with strong load (capacitive load) Output Current In = lload	Yes, Unlimited 1.1 x In A ± 5%	Yes, Unlimited 1.1 x In A ± 5%	Yes, Unlimited 1.1 x In A ± 5%	Yes, Unlimited 1.1 x In A ± 5%	Yes, Unlimited 1.1 x In A ± 5%	Yes, Unlimited 1.1 x ln A ± 5%	Yes, Unlimited 1.1 x In A ± 5%				
Continuous current (without battery) Iload = In	15A 12Vdc / 10A 24Vdc	3A	6A	10A	35A	3A	5A	10A	20A	5A	10A
Max continuous current (with battery) Iload = In + Ibatt	30A 12Vdc / 20A 24Vdc	6A	12A 18A max	20A	70A 105A max	6A	10A	20A	40A	10A	20A
Max current Output Load: (Main Input) Iload (4sec.)  Max current Output Load: (Back Up) Iload (4sec.)	max. 45A 12Vdc / 30A 24Vdc max. 30A 12Vdc / 20A 24Vdc	9A max 6A max	12A max	30A max 20A max	70A max	9A max 6A max	15A max 10A max	30A max 20A max	60A max 40A max	10A max 10A max	30A max 20A max
Start From Battery Without Main (Remote Input Control)	RTCONN (cable); Push Button	RTCONN (cable); Push Button	RTCONN (cable); Push Button	RTCONN (cable); Push Button	RTCONN (cable); Push Button	RTCONN (cable); Push Button	RTCONN (cable); Push Button	CBI2410A/S : RTCONN (cable)	RTCONN (cable); Push Button	CBI485A/S : RTCONN (cable)	RTCONN (cable); Push Button
Time Buffering; (switch off output without main input)	0.5;1;3;5;10;15; 20; 30; 45;60;≈	(2)	(2)	(2)	0.5;1;3;5;10;15; 20; 30; 45;60;=	(2)	(2)	(2)	0.5;1;3;5;10;15; 20; 30; 45;60;**	(2)	0.5;1;3;5;10;15; 20; 30; 45;60;=
Turn-On delay after applying mains voltage	1sec. Max	1sec. Max	1sec. Max	1sec. Max	1sec. Max	1sec. Max	1sec. Max	1.5sec. Max	1sec. Max	1.5sec. Max	1sec. Max
BATTERY CHARGER OUTPUT		T	T			T	T	T	T	T	
Boost charge (Typ. at I <sub>N</sub> ) Short circuit Element Detection	14.4Vdc / 28.8Vdc Yes	14.4Vdc Yes	14.4Vdc Yes	14.4Vdc Yes	14.4Vdc Yes	28.8Vdc Yes	28.8Vdc Yes	28.8Vdc Yes	28.8Vdc Yes	57.6Vdc Yes	57.6Vdc Yes
Max.Time Boost–Bulk charge (Typ. at I <sub>N</sub> )	15h	15h	15h	15h	15h	15h	15h	15h	15h	15h	15h
Min.Time Boost-Bulk charge (Typ. at I <sub>N</sub> )	1min.	1min.	1min.	1min.	1min.	1min.	1min.	1min.	1min.	1min.	1min.
Float charge (25 °C) (at In) Recovery Charge	13,48Vdc/26,76Vdc 2 - 10Vdc / 2 - 20Vdc	13,48Vdc 2 – 9Vdc	13,48Vdc 2 – 9Vdc	13,48Vdc 2 – 9Vdc	13,48Vdc 2 – 9Vdc	26,76Vdc 2 – 16Vdc	26,76Vdc 2 = 16Vdc	26,76Vdc 2 = 16Vdc	26,76Vdc 2 - 16Vdc	53,52Vdc 2 – 24Vdc	53,52Vdc 2 – 16Vdc
End of charging current (Bulk charge)	6% of charging current limiting	0.3A	0.3A	0.3A	0.3A	0.3A	0.3A	0.3A	0.3A	0.3A	0.3A
Charging max I <sub>batt</sub>	15A ± 5% 12Vdc / 10A ± 5% 24Vdc	3A ± 5%	6A ± 5%	10A ± 5%	35A ± 5%	3A ± 5%	5A ± 5%	10A ± 5%	20A ± 5%	5A ± 5%	10A ± 5%
Charging current Limiting I <sub>N</sub> (I <sub>ad)</sub> Reverse battery protection	10 ÷ 100 % / I <sub>bat</sub> Yes	20 ÷ 100 % / I <sub>bett</sub> Yes	20 ÷ 100 % / I <sub>ball</sub> Yes	20 ÷ 100 % / I <sub>ball</sub>	10 ÷ 100 % / I <sub>ball</sub> Yes	20 ÷ 100 % / I <sub>bett</sub> Yes	20 ÷ 100 % / I <sub>batt</sub> Yes	20 ÷ 100 % / I <sub>bett</sub> Yes	10 ÷ 100 % / I <sub>butt</sub> Yes	20 ÷ 100 % / I <sub>bat</sub>	10 ÷ 100 % / I <sub>ball</sub> Yes
Sulfated battery check	Yes by Deep Switch	Yes by Jumper	Yes by Jumper	Yes Yes by Jumper	Yes by Jumper	Yes by Jumper	Yes by Jumper	Yes by Jumper	Yes by Jumper	Yes by Jumper	Yes by Jumper
Jumper/Switch Config. Battery Type (Li-Ion optional)							V/cell gel; NiCd 1.4V/cell ; Li-lon 3.45	/cell			
Quiescent Current Remote Input Control (RTCONN cable)	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float	≤100mA Boost / Float
Threshold alarm Battery almost flat	10 - 11 Vdc batt / 20 - 21 Vdc batt	10 - 11 Vdc batt	10 – 11 Vdc batt	10 – 11 Vdc batt	10 - 11 Vdc batt	20 - 21 Vdc batt	20 - 21 Vdc batt	20 - 21 Vdc batt	20 – 21 Vdc batt	40 – 42 Vdc batt	40 – 42 Vdc batt
LVD. Low Voltage Disconnection (Protections against total Battery discharge)	9 - 10 Vdc batt / 19 - 20 Vdc batt	9 - 10 Vdc batt	9 - 10 Vdc batt	9 - 10 Vdc batt	9 - 10 Vdc batt	19 - 20 Vdc batt	19 - 20 Vdc batt	19 - 20 Vdc batt	19 - 20 Vdc batt	38 - 42 Vdc batt	38 – 40 Vdc batt
Charging Curve: IUoU		*	*	-		IUoUo, Automatic, 4 stage	•		-		-
SIGNAL OUTPUT (free switch contacts)											
Main or Backup Power	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Main or Backup Power Low Battery	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes
Main or Backup Power Low Battery Fault Battery or System AUXILIARY OUTPUT	Yes Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Main or Battery Power Found Battery or System AUXILLARY OUTPUT AUXILLARY OUTPUT AUXILLARY OUTPUT	Yes Yes Yes (RTCONN cable)	Yes Yes No	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes	Yes Yes	Yes Yes No	Yes Yes
Main or Backup Power Low Battery Eartil Battery or System AUXILLARY OUTPUT UPS Disabling Temp. Comp. Battery (with external probe)	Yes Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Main or Backup Power Low Battery Battery or System AUXILLARY OUTPUT UPS Disabiling Temp. Comp. Battery (with external probe) Parallel connection Remote monitoring data. Protocol:	Yes Yes Yes (RTCONN cable)	Yes Yes No RJ Temp (cable)	Yes Yes No RJ Temp (cable)	Yes Yes	Yes Yes No RJ Temp (cable)	Yes Yes	Yes Yes No RJ Temp (cable)	Yes	Yes Yes No RJ Temp (cable)	Yes Yes No	Yes Yes No RJ Temp (cable)
Main or Backup Power Low Battery Fault Battery or System AUXILIARY OUTPUT UPD Shashling Tenp. Comp. Battery (with external probe) Penalici connection Remote monitoring data. Protocol: CLIMATIC DATA AUXILIARY CLIMATIC DATA	Yes Yes Yes (RTCONN cable) Yes (RTCONN cable) RJ Temp (cable) No ModBus RTU	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) Yes ModBus	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) No No	Yes  No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) Yes ModBus	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) Yes ModBus
Main or Backup Power  Lewit Battery or System  AUXILARY OUTPUT  UPD Sleabiling  Penalic conneatery (with external probe)  Penalic conneatery (with external probe)  Remote monitoring data. Protocol:  CLIMATIC DATA  Ambient Temperature operation	Yes Yes Yes (TCONN cable) R. Temp (cable) No Modbus RTU  -25 = +70°C	Ves Yes  No RJ Temp (cable) No No -25 * +70°C	Yes Yes No RJ Temp (cable) No No No -25 * *70°C	Yes Yes No RJ Temp (cable) No No No -25 + +70°C	Yes Yes No RJ Temp (cable) Yes ModBus -25 + *70*C	Yes Yes No RJ Temp (cable) No No -25 + +70°C	Yes Yes No RJ Temp (cable) No No No -25 + +70°C	Ves  No RJ Temp (cable) No No No -25 + +70°C	Yes Yes No RJ Temp (cable) Yes ModBus -25 * +70°C	Yes Yes No RJ Temp (cable) No No -25 + +70°C	Yes Yes No RJ Temp (cable) Yes ModBus -25 + +70°C
Main or Backup Power Low Battery Battery or System AUXILARY OUTPUT UPE Disabiling Temp. Comp. Battery (with external probe) Parallel connection Remote monitoring data. Protocol: CLIMATIC DATA Ambient Temperature operation De rating "T" > (in)	Yes Yes Yes (RTCONN cable) Yes (RTCONN cable) RJ Temp (cable) No ModBus RTU	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) Yes ModBus	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) No No	Yes  No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) Yes ModBus	Yes Yes No RJ Temp (cable) No No	Yes Yes No RJ Temp (cable) Yes ModBus
Main or Backup Power Low Battery Sulf Battery or System MUXIL ARY OUTPUT PPD Disabling Fenp. Comp. Battery (with external probe) Parallel Connection Remote monitoring data. Protocol: CLIMATIC DATA Minibert Temperature operation De rating 1" > (in) Minibert Temperature Storage Unmidist 42 5" C  Minibert Congression De rating 1" > (in) Minibert Temperature Storage	Yes Yes Yes (RTCONN cable) RJ Temp (cable) RJ Temp (cable) No ModSlus RTU  -25 + +70°C > 50° -25%(n) / *C -40 + +85°C 95%	Yes Yes Yes No RJ Temp (cable) No No No -25 + 70°C -50° -2.5%(ln) / °C -40 + 85°C 95%	Ves  Ves  No RJ Temp (cable) No No -25 * *70°C > 50° - 25%(in) / °C 40 * +48°C 95%	Yes  No RJ Temp (cable) No No No -25 = *70"C -250" -2.5%(n) / "C -40 = +85"C -95%	Yes  Yes  No RJ Temp (cable)  Yes  ModBus	Ves  Yes  No RJ Temp (cable) No No  -25 * *70°C > 50° -2.5%(n) / °C -40 * +85°C 35%	Ves  Ves  No RJ Temp (cable)  No No  -25 * *70°C > 50° * 2.5%(n) / °C 40 * 40° * 45°C 95%	Ves  No RJ Temp (cable) No No No -25 + +70°C -50° -2.5%(in) / °C -40 + +85°C 95%	Yes  No RJ Temp (cable) Yes  ModBus  ModBus  125 = 70°C > 50° - 25%(ln) / °C - 40° + 48°C 95%	Yes  No R. Temp (cable) No No No So -550" -2.5%(in) / "C -40" -40" -85" C 95%	Yes  No RJ Temp (cable) Yes  ModBus  -25 * *70°C >50° * 25%(in) / °C +40 * +48°C 95%
Waln or Backup Power  Crow Battery  Faul II Battery or System  UXILLARY OUTPUT  PS Disabling  Fremp. Comp. Battery (with external probe)  Parallel connection  Remote monitoring data. Protocol:  DLMATIC DATA  Ambient Temperature operation  Per rating 1" > (in)  Minibent Temperature Storage  Funnishing 425 °C  Hundides 0 to 2,000m - 0 to 6,500tt	Yes Yes Yes (RTCONN cable) Yes (RTCONN cable) RJ Temp (cable) No ModBus RTU  -25 = +70°C -50°C-25%(n) / °C -40 + 485°C -55% No restrictions	Yes  No RJ Temp (cable) No No S-25 + 70°C - 50° 2.5%(In) / °C - 40 - +85°C - 55% No restrictions	Ves  Ves  Ves  No  RJ Temp (cable)  No  RJ Temp (cable)  No  25 + 70°C  - 50° - 2.5%(ln) / °C  - 40 + 48°C  85%  No restrictions	Yes  Yes  No  RJ Temp (cable)  No  No  So	Yes  No RJ Temp (cable) Yes  ModBus  25 + 70°C  > 50° 25%(In) / °C  40 + 85°C  95%  No restrictors	Yes Yes Ves No RJ Temp (cable) No No S= *70°C S= *50° -2.5%(n) / °C 40 +85°C S5% No restrictions	Ves  Ves  No  RJ Temp (cable)  No  No  25 + 70°C  - 50° - 2.5%(n) ° C  40 + 85°C  85%  No restrictions	Yes  No RJ Temp (cable) No No No -25 + +70°C -50° -2.5%(in) / °C -40° +85°C 95% No restrictions	Yes Yes No RJ Temp (cable) Yes ModBus 50° -25° +70° C -40° +85° C 55% No restrictions	Yes  No  RJ Temp (cable)  No  No  Self-self-self-self-self-self-self-self-s	Yes  Yes  No  RJ Temp (cable)  Yes  ModBus  **Se **70°C  -50° -25%(n) / °C  -40 **85°C  55%  No restrictions
Waln or Backup Power  Low Battery Fault Battery or System  LUDILLARY OUTPUT  Para Disabiling  Perpa, Leon, Battery (with external probe)  Perpa, Leon, Battery (with external probe)  Perpa, Leon, Battery (with external probe)  Remote monitoring data. Protocol:  LUMATIC DATA  Ambient Temperature operation  De rating 1" > (in)  Imbient Temperature Storage  Full Committed on the Second Committed on the Second Committed Committ	Yes Yes Yes (RTCONN cable) RJ Temp (cable) RJ Temp (cable) No ModSlus RTU  -25 + +70°C > 50° -25%(n) / *C -40 + +85°C 95%	Yes Yes Yes No RJ Temp (cable) No No No -25 + 70°C -50° -2.5%(ln) / °C -40 + 85°C 95%	Ves  Ves  No RJ Temp (cable) No No -25 * *70°C > 50° - 25%(in) / °C 40 * +48°C 95%	Yes  No RJ Temp (cable) No No No -25 = *70"C -250" -2.5%(n) / "C -40 = +85"C -95%	Yes  Yes  No RJ Temp (cable)  Yes  ModBus	Ves  Yes  No RJ Temp (cable) No No  -25 * *70°C > 50° -2.5%(n) / °C -40 * +85°C 35%	Ves  Ves  No RJ Temp (cable)  No No  -25 * *70°C > 50° * 2.5%(n) / °C 40 * 40° * 45°C 95%	Ves  No RJ Temp (cable) No No No -25 + +70°C -50° -2.5%(in) / °C -40 + +85°C 95%	Yes  No RJ Temp (cable) Yes  ModBus  ModBus  125 = 70°C > 50° - 25%(ln) / °C - 40° + 48°C 95%	Yes  No R. Temp (cable) No No No So -550" -2.5%(in) / "C -40" -40" -85" C 95%	Yes  No RJ Temp (cable) Yes  ModBus  -25 * *70°C >50° * 25%(in) / °C +40 * +48°C 95%
Main or Batkup Power Low all tartery or System AUXILLARY OUTPUT  PPS Disabling  Penalic Comments of the Comment	Yes  Yes  Yes (RTCONN cable)  R.Temp (cable)  No  Modbus RTU  -25 + +70°C  > 50° -2.5%(n) / °C  40 + +85°C  05%  No reating 50° 10000m  Auto Convection	Yes  No  RJ Terro (cable)  No  No  25 + 770'C  > 50' 2.59'(n) / 'C  - 40' - 85''C  55''  Son castroid on Auto Convection  Auto Convection	Yes  No RJ.Temp (cables) No No  125 + 770°C  255 + 770°C  255 + 255(m) / °C  405 + 85°C  85% No reshifted one Do-elding \$5°C 10000m  Auto Convection	Yes  Yes  No RJ Temp (cable) No No No  25 + *70°C  25 + *70°C  40 + 85°C  55°S No restrictors De-rating 5°C/1000m Auto Convection	Ves  No RJ Temp (cables) Yes  ROTOR  ROTOR  ROTOR  ROTOR  ROTOR  ROTOR  ROTOR  SOP  SOP  SOP  SOP  SOP  SOP  SOP  S	Ves  Yes  No RJ Temp (cable) No No  25 + +70°C  -50° -25%(n) / °C  40 + 485°C  95% No restrictions De-staing 5°C1000m Auto Convection	Ves  No RJ Temp (cable) No No 25 + +70°C 25 + +70°C 40 + 285°C 95% No restrictors De-string 5°C:1000m Auto Convection	No   R.J. Temp (cable)   R.J. Temp (cable)   No   No   No	Yes  Yes  No RJ Temp (cable) Yes  ModBus  -25 + +70°C -50° -2.5%(n) / °C -40 + +85°C -95% No restrictions Devating 5°C/1000m Auto Convection	Yes  Yes  No RJ Temp (cable) No No  -25 + +70°C  -50° -25%(n) / °C  -40 + 85°C  55% No restrictions De-rating 5°C1000m Auto Convection	Yes Yes No RJ Temp (cable) Yes ModBus  -25 + +70°C +40 + +85°C 95% No restrictions De-rating 5°C1000m Auto Convection
Main or Backup Power Fault Battery or System AUXILLARY OUTPUT  PPD Shashling Temp. According to the Accordin	Yes Yes Yes (RTCONN cable) RJ Temp (cable) RJ Temp (cable) No Modflus RTU  25 + 70°C > 50° - 2.5%(in) / °C - 40° + 85°C 95% No restrictions De-ading SCH 000m Auto Convection 3000Vac	Yes  No RJ Temp (cable) No No No  1-25 + *70°C > 50° - 2.5%(m) / °C - 40° + 85°C 95% No restrictors One enting 50°C1000m Auto Convection 3000Vac	Yes  Yes  RJ Temp (cable)  No  RJ Temp (cable)  No  No	Yes	Ves  No	Yes  Yes  No RJ Temp (cable) No No S-5 **70°C  **50° - 2.5%(n) / °C  -40 **48°C  95% No restrictions Devaling 5°C1000m Auto Convection	Ves  Yes  No RJ Temp (cable) No  -25 * *70°C  > 50° * 2.5%(m) / °C  40 * 40° * 40° * 40° * 60° *	Ves  No RJ Temp (cable) No No No S5° +70°C >-50° +25%(in) 'C 40 +40°C 95% No restrictions De-sating 5°C10000 Auto Convection 3000Vac	Yes  Yes  No  RJ Temp (cable)  Yes  ModBus  -25 + 70°C  > 50° -25%(ln) / °C  -40 + 85°C  95%  No restrictions  De-eating 5°C1000m  Auto Convection  3000Vac	Yes	Yes  Yes  No RJ Temp (cable) Yes  Acs + 70°C  > 50° - 25%(in) / °C  - 40° + 85°C  95% No restrictions  No restrictions  De-tating 5°C1000m  Auto Convection
Waln or Backup Power Low Battery  Bauth Battery or System  AUXILLARY OUTPUT  PP Disabling  Panalic Comp. Battery (with external probe)  Panalic Comp. Batter	Yes  Yes  Yes  (Yes  (Yes  (TCONN cable)  R. Temp (cable)  No  Modbus RTU  -25 + +70°C  > 50° -2.5%(n) / °C  -40 + e8°C  95%  No restrictions  Do-ening 5°C/1000m  Auto Convection  3000Vac  1050Vac	Yes  No RJ Terro (cable) No No No  25 + 770°C >50° 2 55%(n) / °C 40 + e8°C 95% No nestrictions De-rating 5°C/1000m Auto Convection 3000/ve 10005/ve	Yes  No RU Temp (cable) No No No  25 + 770°C > 50°C 254(m) / °C  40° + 65°C  55° - 254(m) / °C  40° + 65°C  55° - 254(m) / °C  35% No	Yes  No RU Temp (cable) No	Ves  No RJ Temp (cable) Yes  RJ Temp (cable) Yes  ModBlus  25 = +70°C + 50° - 254(m) / °C 40 + 48°C 95% No restrictions De-rating 5°C1000m Auto Convection 3000°/xc 10609/xc	Ves  Yes  No RJ Temp (cable) No No  25 + *70°C  -50° -2.5%(In) / °C  40 + 485°C  55%  No restrictions De-rating 5°C1000m Auto Convection  3000Vac  1905Vac	Ves  Ves  No RU Temp (cable) No No No  25 + +70°C  -50° -25%(in) *°C  40 + 485°C  95%  De-rating 5°C/1000m Auto Convection  3000Vac  1000Vac	Ves  No RJ Temp (cable) No	Yes  Yes  No RJ Temp (cable) Yes  ModBus  -25 + 70°C -50° -2.5%(n) / °C -40 + 85°C -55%  S9% No restrictions De-rating 5°C1000m Auto Convection  30000Vac -16050Vac	Yes  Yes  No RJ Temp (cable) No No  -25 + +70°C  -50° -25%(n) 1°C  -40 + 85°C  -50%  Devaling 5°C	Yes Yes Yes No RJ Temp (cable) Yes ModBus  -25 + 70°C -50° -25%(n) / °C -40 + 85°C -55% De-rating 5°C1000m Auto Convection  3000Vac 15059Vac
Waln or Battury Faul Battury or System AUXILLARY OUTPUT  PPS Disabling Penal Connection Pen	Yes  Yes  Yes  Yes  (TCONN cable)  R 1 Temp (cable)  No  Modbus RTU  -25 = +70°C  > 50° -2.59((n) / °C  -40 + 48°C  95%  No restrictions  De-calling 5°C1 000m  Auto Convection  3000Vac  1005/wc  500Vac	Yes  No RJ Temp (cable) No No No No  25 + 770'C > 50' - 25%(in) / "C 40 + 85'C 95% No nestrictions Oe-aring 5'C/100m Auto Convection 3000Vac 1005Vac 500Vac	Yes  No RJ Temp (cable) No No No  25 + 76°C  25 + 76°C  25 + 76°C  26 + 76°C  26 + 76°C  27 + 76°C  28 + 76°C  29 + 76°C  29 + 76°C  20 + 76°C	Yes  Yes  No RJ Temp (cable) No	Ves  No RJ Temp (cable) Yes  RJ Temp (cable) Yes  Modellus  25 = *70°C  > 50° - 25 (%)(n) ' C  40 - +85°C  95% No restrictions  De-rating \$*Cr10000n  Auto Convection  3000/uc  1905/vac  500/uc	Ves  Yes  No RJ Temp (cable) No No No  -25 * *70°C  *50° -2.5%(n) / °C  40 * +85°C  55%  No restrictions De-rating 5°C/1000m Auto Convection  3000Vae  1605Vac  500Vuc  1820	Vea  Vea  No RJ Temp (cable) No No  25 = *70°C  > 50° \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Ves  No RJ Temp (cable) RJ Temp (cable) No No No Service 25 + 77°C  - 55° - 25%(in) / °C  - 40 + 85°C  95% No restrictions De-rating 5°C/1000m Auto Convection  3000/sec 19059kc 19059kc	Yes  No RJ Temp (cable) Yes  ModBus  -25 * *70°C -2.5%(n) / °C -40 * 85°C -95% No restrictions De-rating 5°C/1000m Auto Convection  3000Vac 1605Vuc 600Vac 11720	Yes  Yes  No RJ Temp (cable) No No  1.25 + *70°C  - 25 + *70°C  - 40 + 85°C  95% No restrictions De-rating 5°C 1000m Auto Convection  3000Vac  1600Vac  1920	Yes  Yes  No RJ Temp (cable) Yes  ModBus  -25 + 70°C -25%(n) / °C -40 + 85°C 95% No restrictions De-rating 5°C1'000m Auto Convection  3000Vac 1605Vac 600Vac
Main or Backup Power Fault Battery or System AUXILIARY OUTPUT PD Disabling Temp. Geom. Battery (with external probe) Fremp. Geom. G	Yes Yes Yes (RTCONN cable) RJ Temp (cable) RJ Temp (cable) No ModBlus RTU  -25 = +70°C >50° -2.59(in) / °C -40 + 480°C 95% No restrictions De-raing 5°C1000m Auto Convection  3000Vac 1605Vac 500Vac	Yes  No RJ Temp (cable) No No No  25 + 70°C  > 50° - 2.5%(n) / °C  - 40° + 85° C  85% No restrictions Do-eating 57°C1000m Auto Convection  3000Vac  1005Vac  5000Vac	Yes  Yes  RJ Temp (cabble)  No  No  1.25 + *70°C  > 50° - 2.5%(n) / °C  -40 * +85°C  95%  No restrictors  De-rating 5°C 1000m  Auto Convection  3000Vac  1005Vac  500Vac	Yes  No RJ Temp (cable) No	Ves  No RJ Temp (cabbe) Yes  RJ Temp (cabbe) Yes  ModBlus  25 + *70°C  > 50° - 2.5%(in) / °C  40 + 48°C  50% No restrictions Devating 5°C f1000m  Auto Convection  3000/vic  1905/vic	Ves  Yes  RJ Temp (cable)  No  RJ Temp (cable)  No  No  -25 + +70°C  >50° -2.5%(in) / °C  -40 + 465°C  95%  No restrictions  De-eating 5°C/1000m  Auto Convection  3000Vac  1600Vac	Ves  Ves  No RJ Temp (cable) No No Sor -2.5%(n) / "C 40 + 65°C 95% No restrictions De-ating 50'1000m Auto Convection 3000Vac 11605Vac 5000Vac	Ves  No  RJ Temp (cable)  No  No  Service  25 **70°C  > 55° *25%(in) '*C  40 **65°C  95%  No restrictore  De-ading 5°C1000m  Auto Convection  3000Vac  1605Vac  500Vac	Yes  No RJ Temp (cable) Yes  RJ Temp (cable) Yes  ModBus  -25 * *70°C  > 50° * 2.5%(in) / °C  +40 * +85°C  95% No restrictions De-eating 5°C/1000m Auto Convection  3000Vac  1605Vac  500Vac	Yes  No RI Temp (cable) No No No No -25 + +70°C -50° -2.5%(in) / °C -40 + +80°C 90° -0.5%(in) / °C -40 + 10°C	Yes  Yes  RJ Temp (cable)  RSJ Temp (cable)  Yes  ModBus  -25 + +70°C  + 50° + 2.5%(in) / °C  +40 + 48°C  55%  No restrictions  De-eating 5°C/1000m  Auto Convection  3000/vac  16059wac  5000/vac
Main or Batkup Power Fault Batkury or System  AUXILLARY OUTPUT  PS Disabling Paral Comp. Battery (with external probe) Paral Comp. Battery (with external pr	Yes  Yes  Yes  Yes  (TCONN cable)  R 1 Temp (cable)  No  Modbus RTU  -25 = +70°C  > 50° -2.59((n) / °C  -40 + 48°C  95%  No restrictions  De-calling 5°C1 000m  Auto Convection  3000Vac  1005/wc  500Vac	Yes  No RU Temp (cable) No	Yes  Yes  RJ Temp (cable)  No  RJ Temp (cable)  No  No	Yes   Yes	Ves  No No RI Temp (cabbe) Yes MoodBus  25 + 70°C  > 50° - 25%(in) / °C  40° + 46°C  95% No restrictors  O-exiting \$5°C1000m  Auto Convection  3000°/ac  1605°/ac	Yes  Yes  Yes  No  RJ Temp (cable)  No  Au  125 = *70°C  > 50° - 2.5%(n) / °C  -40 * 48°C  95%  No restrictions  De-rating 5°C/1000m  Auto Convection  3000Vac  1605Vac  5000Vac  IP 20  > 300 on 12  2	Ves  Yes  No RJ Temp (cable) No  -25 * *70°C  > 50° * 2.5%(n) / °C  40 * 40° * 48°C  95% No restrictions  Oe-esting \$7'.000m  Auto Convection  3000Vac  1605Vac  500Vac  P 20  > 300 000 h  2	Ves  No RJ Temp (cable) No No No No Service Se	Yes Yes Yes Yes No R. I **Emp (cable) Yes  ### (Cable)  #	Yes	Yes  Yes  No R.J Temp (cable) Yes  Another Service Ser
Waln or Battury Fowalt Battury or System AUXILLARY OUTPUT  PPS Disabling Penal-Connestion (With external probe) Penal-Connestion (With	Yes  Yes  Yes  (Yes  (Yes  (TCONN cable)  R. 1 Temp (cable)  No  Modibus RTU  -25 = +70°C  > 50° -2.5%(n) / °C  -40 + e8°C  95%  No restrictions  De-rating 5°C1000m  Auto Convection  3000Vac  1900Vac  500Vac  1920  > 300 000 h  2  4mm (30-10 AWG)  2,5mm(2-14 AWG)	Yes  No RJ Terro (cable) No No No  25 + 770°C >59° 25%(h) 1°C 40 + e8°C 95% No nestrictions De-rating 5°C/1000m Auto Convection  3000/we 1000Vwc 1000Vwc 1000Vwc 2000 000 h 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Yes  No RJ Temp (cable) No No No  25 + 770°C > 50°C 254(m) / °C  40 + 450°C  550°C 254(m) / °C  40 + 450°C  550°C 354(m) / °C  3500°C  Derating 5°C 10000m  Auto Convection  5000/ac  5000/ac  5000/ac  2 500 000 h  2 2 2 2	Yes	Ves  No RJ Temp (cabbis) Yes  RJ Temp (cabbis) Yes  RJ Temp (cabbis) Yes  SO'-25 STAV(m) / 'C  40 + 485°C  95% No restrictions  De-rating 5°C1000m  Auto Convection  3000/vic  1695/vic  500/vic  1990 1900 1900 1900 1900 1900 1900 19	Ves  Yes  No RJ Temp (cable) No No  25 + *70°C  -50° -2.5%(In) / °C  -55° -2.5%(In) / °C  -55	Ves  Ves  Ves  No  RU Temp (cable)  No  No  -25 + *70°C  -50° -25%(in) / °C  -40 + 285°C  -55%  De-rating 5°C/1000m  Auto Convection  30000vac  1805Vac  5000vac  1905Vac  -300 000 h  2 2 2  2.5mm (24-14 AWG)	Ves  No RJ Temp (cable) No No No No Service Se	Yes  Yes  Yes  No  RJ Temp (cable)  Yes  ModBus  -25 + 70°C  -50° -2.5%(n) / °C  -40° +85°C  55%  No restrictions  Devating 5°/1000m  Auto Convection  3000/uc  19 20  -300 00 h  2 4  4mm (30-10 AWG)	Yes  Yes  No RJ Temp (cable) No No  -25 + +70°C  -50° -25%(n) 1°C  -40 + 85°C  -50° -50° -50°C  -40 + 80°C  -50° -50°C  -	Yes Yes Yes No RJ Temp (cable) Yes ModBus  -25 + 70°C -50° -2.5%(m) / °C -40 + 85°C -55° -2.5%(m) / °C -55° -2.5%
Main or Backup Power  Low Battery Fault Battery or System  AUNILARY OUTPUT  PDS Disabling Temp. Battery (with external probe) Perp. Booking Temp. Booking Temp. Battery (with external probe) Perp. Booking Remote monitoring data. Protocol: CLIMATIC DATA Ambient Temperature operation De rating 17 - 00 in Ambient Temperature operation De rating 17 - 00 in Ambient Temperature Storage Humestily at 25 ° C Altitude: 0 to 2.000m - 0 to 5.500ft Altitude: 2 i. 200 to 6.000m - 1.5.50 to 20.000ft Cooling GENERAL DATA Booking 17 - 00 in GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft Cooling 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA Booking 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1.5.50 to 20.000ft GENERAL DATA BOOKING 18 - 00 in 6.000m - 1	Yes Yes Yes (TCONN cable) RT Temp (cable) RT Temp (cable) No Modblus RTU  25 + +70°C > 50° -2.5%(n) / °C 40 + +85°C 55% No restrictions De-rating 5°C/1000m Auto Corwection  5000/wc 1605/wc 1	Yes  No RU Temp (cable) No	Yes  Yes  RJ Temp (cable)  No  RJ Temp (cable)  No  No	Yes   Yes	Ves  No No RI Temp (cabbe) Yes MoodBus  25 + 70°C  > 50° - 25%(in) / °C  40° + 46°C  95% No restrictors  O-exiting \$5°C1000m  Auto Convection  3000°/ac  1605°/ac	Yes  Yes  Yes  No  RJ Temp (cable)  No  Au  125 = *70°C  > 50° - 2.5%(n) / °C  -40 * 48°C  95%  No restrictions  De-rating 5°C/1000m  Auto Convection  3000Vac  1605Vac  5000Vac  IP 20  > 300 on 12  2	Ves  Yes  No RJ Temp (cable) No  -25 * *70°C  > 50° * 2.5%(n) / °C  40 * 40° * 48°C  95% No restrictions  Oe-esting \$7'.000m  Auto Convection  3000Vac  1605Vac  500Vac  P 20  > 300 000 h  2	Ves  No RJ Temp (cable) No No No No Service Se	Yes Yes Yes Yes No R. I **Emp (cable) Yes  ### (Cable)  #	Yes	Yes  Yes  No RJ Temp (cable) Yes  Acs + 770°C  > 50° - 25%(in) / °C  - 40° + 85°C  95% No restrictions  De-eating 5°C1000m  Auto Convection  3000′Vac  1605′Vac    P 20  > 300 000 h  2
Main or Backup Power Low Battery Fault Battery or System AUXILARY OUTPUT  Turn Description Temp. Comp. Battery (with external probe) Remote monitoring data. Protocol: CLIMATIC DATA Ambient Temperature operation De rating 1° 2° 10° Ambient Temperature operation De rating 1° 2° 10° Ambient Temperature Storage Humildity at 25° C Altitude: 0 10° 200m · 0 10° 5.500T Altitude: 0 200m · 0 10° 5.500T Altitude: 2000 in 6.500T Battery Cooling GENERAL DATA Storage (NY OUT) Stolation Voltage(NY OUT) Stolation Voltage(NY OUT) Stolation Class (ENISC 96320) Reliability (NTSF IEC 56790) Pollution Degree Environment	Yes Yes Yes (TCONN cable) RT Temp (cable) RT Temp (cable) No Modbus RTU  25 = +70°C > 50° -2.5%(in) / °C -40 + +85°C 95% No restrictions De-rating 5°C1000m Auto Convection  5000Vac 1605Vac  FF 20 > 500 000 h 2 4mm (30-10 AWG) 2.5mm/24-14 AWG) 1, with PE	Yes  No RJ Temp (cable) No No No No  -25 + *70°C -50° -2.5%(n) /*C -40 * +85°C 95% No restrictions De-rating 5°C/1000m Auto Convection 5000/vic 10000/vic 100000/vic 10000/vic 100000/vic 10000/vic 100000/vic 100000/vic 100000/vic 100000/vic 100000	Ves  Ves  RJ Temp (cable)  No  RJ Temp (cable)  No  No  255 + 770°C  > 50° - 2.5%(in) / °C  -40° + 40° C  85%  No restrictors  Devaring 5° C/1000m  Auto Convection  3000Vec  1905Vec  1905Vec  1905Vec  1905Vec  1905Vec  1005Vec	Yes  Yes  Yes  No RJ Temp (cable) No No  No  25 + +70°C  - 50° - 2.5%(n) / °C  -40 + +65°C  95% No restrictions Devating 5°/1000m Auto Convection  3000Vac  1500Vac  IP 20  2.5mm (24-14 AWG) I, with PE	Ves  No  RJ Temp (cabble)  Yes  Rodition  RJ Temp (cabble)  Yes  ModBlus  JS = +70°C  > 50° -2.5%(in) / °C  40 + 48°C  95%  No restrictions  Decaring 5°C/1000m  Auto Convection  J000/lac  1955/kc  500/lac  IP 20  > 300 00 h  2  4mm (30-10 AWG)    , with PE	Ves  Yes  RJ Temp (cable)  No  RJ Temp (cable)  No  No  -2.5 + +70°C  >50° -2.5%(n) / °C  -40 + +65°C  95%  No restrictions  De-rating 5°C/1000m  Auto Convection  3000Vac  1600Vac  19 20  2.5mm (24-14 AWG)  1, with PE	Ves  Ves  No RJ Temp (cable) No	Ves  No  RJ Temp (cable)  No  No  Service (Cable)  25 * *70°C' > 50° *25%(n) ' 'C'  40 * *80°C' > 5	Yes  Yes  No RJ Temp (cable) Yes  RJ Temp (cable) Yes  ModBus  -25 * * 70"C	Yes	Yes  Yes  No RJ Temp (cable) Yes  ModBus  255 + 470°C > 50° - 2.5%(in) / °C - 40° + 45° °C 95% No restrictions De-eating 5°C1000m Auto Convection  3000Vac 1505Wac IP 20 - 300 000 h 2 - 4mm (30-10 AWG) I, with PE

<sup>(1) -</sup> Options to be defined by Order/S (ex: CBIXXXA/S), Push Button not available (2) - Yes if required by order /TB1/TB5..

All specification are subject to change without note

www.adelsystem.com