



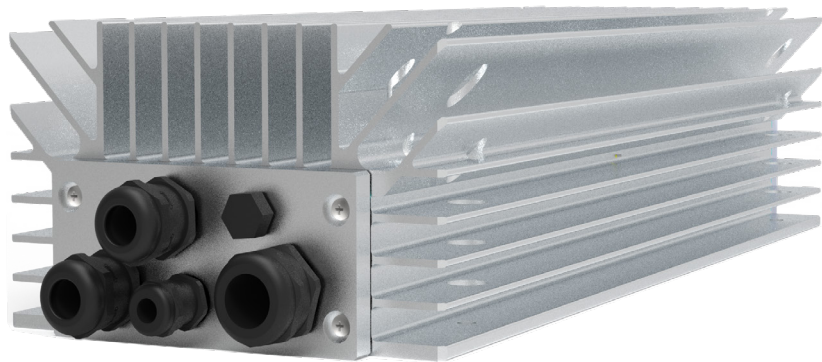
Leading Conversion Technology for Power Resilience

SIERRA XC 10 - 48/230

User Manual

THE NEW GENERATION OF POWER CONVERTERS

- **DUAL AC AND DC OUTPUT CONVERTER**
Commercial Power as default source
- **AC AND DC BACKUP IN A DC ENVIRONMENT**
Leverage your existing DC infrastructure
- **ONE STOP SHOP**
Wide output power range
- **HARSHEST AC INPUT CONDITIONS**
Without compromising the quality of the AC output
- **HARSHEST ENVIRONMENT CONDITIONS**
Product for extreme environment conditions



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VERSION 1.1

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Release Note:

Version	Release date (DD/MM/YYYY)	Modified page number	Modifications
1.0	13/02/2024	-	First release of the Manual.
1.1	18/04/2024	20	Added section "6.3 System Start-up"

1. CE+T Power at a glance

CE+T Power is your trusted partner in **advanced power solutions** engineered to meet the demands of modern and dynamic industrial applications. With over 60 years of experience in power conversion technology, CE+T Power nurtures the industry with **innovative solutions designed for critical power backup and energy management**.

Our complete range of power solutions includes **modular inverters** (DC to AC), **UPS** (securing AC loads with batteries), and **multidirectional converters** (inverter, rectifier, and UPS all-in-one). Coupled with our state-of-the-art **monitoring solution**, you have a real energy blender to connect multiple sources of energy seamlessly!

Whether you require **robust backup power solutions**, **energy management solutions**, or a **combination of both**, CE+T Power delivers tailored solutions to meet your specific needs. Our products are **designed with integration in mind**, ensuring **seamless compatibility with other components of your system**. CE+T Power is committed to providing you with the expertise and resources needed to maximize the performance of your power systems.

Thank you for choosing CE+T Power as your partner in advanced power management. Let's power the future together.

2. Abbreviations

AC	Alternating current
DC	Direct current
DHCP	Dynamic Host Configuration Protocol
DSP	Digital Signal Processor
ECI	Enhanced Conversion Innovation
EPC	Enhanced Power Conversion
ESD	Electro Static Discharge
ETH	Ethernet
HTTP	HyperText Transfer Protocol
HTTPS	Secure HyperText Transfer Protocol
LAN	Local Access Network
MBB	Measure Box Battery
MBP	Manual By-pass
MIB	Management Information Base
MET	Main Earth Terminal
N	Neutral
NTP	Network Time Protocol
PCB	Printed Circuit Board
PE	Protective Earth (also called Main Protective Conductor)
PWR	Power
REG	Regular
SNMP	Simple Network Management Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
TRS	True Redundant Structure
USB	Universal Serial Bus

3. Warranty and Safety Conditions*

3.1 Disclaimer

- The manufacturer declines all responsibilities if equipment is not installed, used or operated according to the instructions herein by skilled technicians according to local regulations.
- Warranty does not apply if the product is not installed, used or handled according to the instructions in the manual.
- This equipment is shipped with a SHOCKWATCH monitor. If the SHOCKWATCH shows that the equipment was exposed to excessive force the warranty will be void.

3.2 Technical care

- This electric equipment can only be repaired or maintained by a “qualified employee” with adequate training. Even personnel who are in charge of simple repairs or maintenance are required to have knowledge or experience related to electrical maintenance.
- Please follow the procedures contained in this Manual, and note all the “DANGER”, “WARNING” AND “NOTICE” marks contained in this Manual. Warning labels must not be removed.
- Qualified employees are trained to recognize and avoid any dangers that might be present when working on or near exposed electrical parts.
- Qualified employees know how to lock out and tag out machines so the machines will not accidentally be turned on and injure employees working on them.
- Qualified employees also know safety related work practices, including those by OSHA and NFPA, as well as knowing what personal protective equipment should be worn.
- All operators are to be trained to perform the emergency shut-down procedure.
- Never wear metallic objects such as rings, watches, or bracelets during installation, service and maintenance of the product.
- Insulated tools must be used at all times when working with live systems.
- When handling the system/units pay attention to sharp edges.
- This product is suitable for use in a computer room.

3.3 Installation

- This product is intended to be installed only in restricted access areas as defined by local regulations and in accordance with the National Electric Code, ANSI/NFPA 70, or equivalent agencies.
- The Converter System may contain output over current protection in the form of circuit breakers. In addition to these circuit breakers, the user must observe the recommended upstream and downstream circuit breaker requirements as defined in this manual.
- Please use extreme caution when accessing circuits that may be at hazardous voltages or energy levels.
- The modular converter rack is a dual input power supply. The complete system shall be wired in a way that both input and output leads can be de-energized when necessary.

* These instructions are valid for most CE+T Products/Systems. Some points might however not be valid for the product described in this manual.

- Systems that have no AC input wired and connected can be seen as independent power sources. To comply with local and international safety standards N (input) and PE shall be bonded. The bonded connection between N (input) and PE must be removed once the AC input is connected.
- AC and DC circuits shall be terminated with no voltage / power applied (de-energized).
- The safety standard IEC/EN62040-1-1 requires that, in the event of an output short circuit, the converter must disconnect in 5 seconds maximum. The parameter can be adjusted on Inview; however, if the parameter is set at a value > 5 seconds, an external protection must be provided so that the short circuit protection operates within 5 seconds. Default setting is 60 seconds.
- The system is designed for IP65 environment.
- Environment Conditions:
 - Storage / Operating Conditions: -40 to 70°C
 - Relative Humidity: 0-100%, outside installation possible
 - Altitude above sea without de-rating: Less than 1500 m
Greater than 1500 m – de-rating at 0.8% per 100 m
Should not be installed above 4000 m
- All illustrations in the manual are for general reference, refer to the technical drawing which is received along with the system for exact information.

3.3.1 Handling

- The cabinet shall not be lifted using lifting eyes.
- Remove weight from the cabinet by unplugging the converters.

3.3.2 Surge and transients

The mains (AC) supply of the modular converter system shall be fitted with Lightning surge suppression and Transient voltage surge suppression suitable for the application at hand. Manufacturer's recommendations of installation shall be adhered to. Selecting a device with an alarm relay for function failure is advised.

Indoor sites are considered to have a working lightning surge suppression device in service.

- Indoor sites Min Class II.
- Outdoor sites Min Class I + Class II or combined Class I+II. The modular converter system/rack can reach hazardous leakage currents. Grounding must be carried out prior to energizing the system. Grounding shall be made according to local regulations.

Note:

Choosing and installing surge arrestors must obey to precise technical rules. Distance to equipment to protect, cable gage and cable routing have significant influence on proper device service.

Some areas are more susceptible to be hit by electrical strikes, especially when altitude increases.

Good earthing is also crucial for surge arrestors to work properly.

CE+T declines any liability in regard to damaged caused to equipment not correctly or not sufficiently protected.

3.3.3 Other

- Insulation test (Hi-Pot) must not be performed without instructions from the manufacturer.

3.4 Maintenance

- The converter system/rack can reach hazardous leakage currents. Earthing must be carried out prior to energizing the system. Earthing shall be made according to local regulations.
- Prior to any work conducted to a system/unit, make sure that AC input voltage and DC input voltage are disconnected.
- Prior to accessing the system or modules, make sure all source of supply is disconnected.
CAUTION – Risk of electric shock. Capacitors store hazardous energy. Do not remove cover until 5 minutes after disconnecting all sources of supply.
- Some components and terminals carry high voltage during operation. Contact may result in fatal injury.

3.5 Replacement and Dismantling

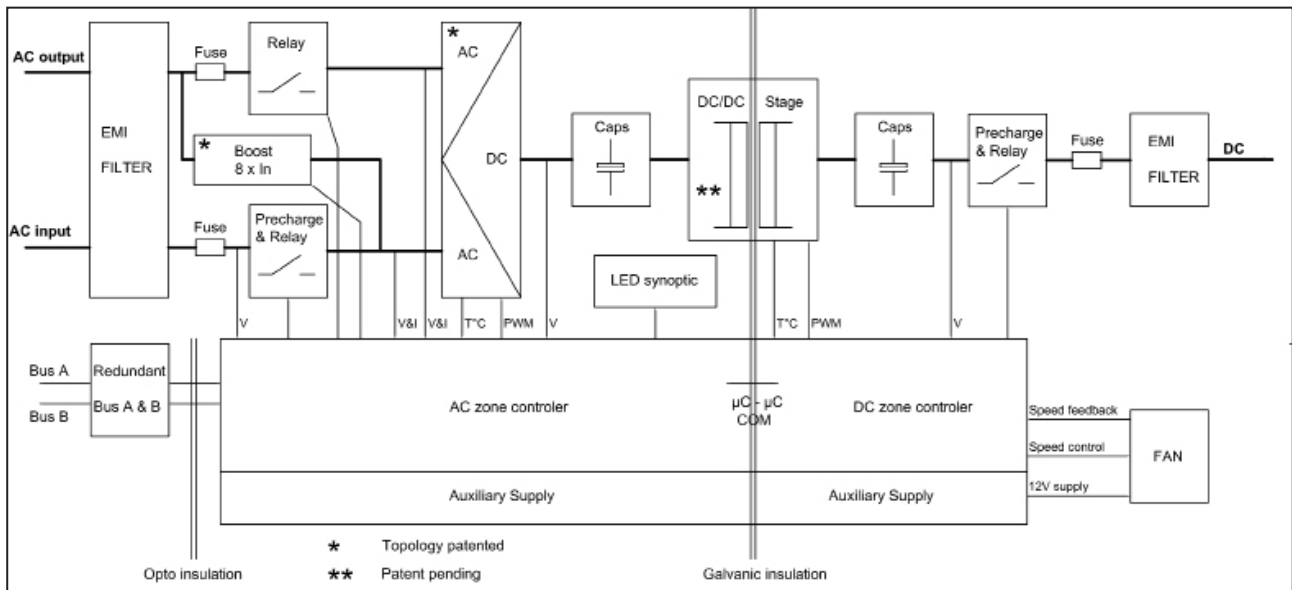
- ESD Strap must be worn when handling PCB's and open units.
- The converter system/rack is not supplied with internal disconnect devices on input nor output.
- CE+T cannot be held responsible for disposal of the converter system and therefore the customer must segregate and dispose of the materials which are potentially harmful to the environment, in accordance with the local regulations in force in the country of installation.
- If the equipment is dismantled, to dispose of its component products, you must comply with the local regulations in force in the country of destination and in any case avoid causing any kind of pollution.

To download the latest documentation and software, please visit our website at www.cet-power.com

4. ECI TECHNOLOGY¹

A Sierra module is a triple port converter built with ECI technology. This module delivers pure sinusoidal output and ripple free DC output from battery or AC mains.

The below block diagram gives an explicit description of the topology and its operation.



ECI technology has AC to DC, DC to AC, and DC to DC converters to provide constant and disturbance-free output power regardless of the input source.

The power flows either from AC or DC source under the control of the DSP controller. Thanks to the module's internal energy buffering, transferring the load between two input sources is achieved in 0 ms.

ECI can detect short circuit conditions at the AC output level and start the BOOST mode function. This mode will provide 8x of the nominal current to clear the fault within 20ms, and thus keeping other critical loads in operation.

Sierra module works on True Redundant Structure (TRS) that features decentralized, independent logic, and redundant communication bus.

Each Sierra module has three levels of protection, and it will help to isolate from other modules in case of any fault in the corresponding module. Due to this functionality in each module, it provides no single point of failure in modular systems.

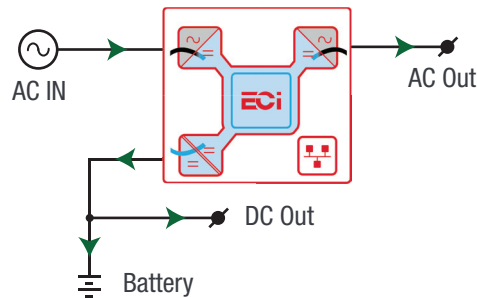
The Sierra modular systems provide quality output power with higher efficiency.

¹ Information and data given in this chapter is intended to serve as an overview of the ECI Technology. Detailed features and parameters for each individual module type in the range may differ and should be referred to in the dedicated data sheet.

4.1 AC-AC mode

In EPC mode, the AC Mains is the primary source and DC source works as a backup. When AC mains is present, the Sierra module takes energy from the AC source and feed to:

- AC Load via a double conversion to provide a pure sine wave.
- DC load and also charges the battery with a regulated DC.



The total output power of a module can be shared between the AC load, DC load and charging power based upon the requirement.

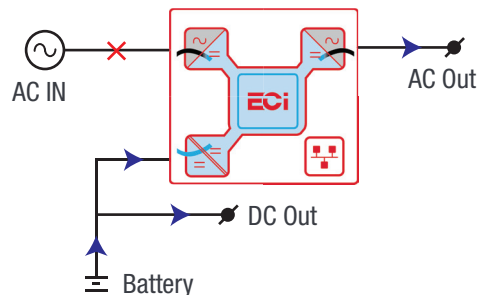
If the AC source is not present, the module seamlessly switches to DC source without impacting the critical loads and resumes to EPC mode once AC source returns. The transfer time between AC to DC and DC to AC is 0 ms.

The EPC mode provides a higher efficiency of $\geq 96\%$ without compromising the purity of the output sine wave.

4.2 DC-AC mode

In back up mode, module operates in DC source and feed to:

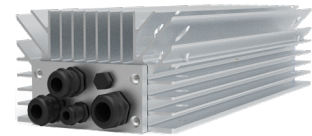
- AC Load via a double conversion to provide a pure sine wave.
- DC load directly.
- Measure Box Battery (MBB) is used for DC power calculation.



5. Basic Information

5.1 Sierra XC 10

Telecom / Datacom:	Input	48 Vdc 230 Vac, 50/60 Hz
	Output	230 Vac and 48 Vdc
	Power	1000 VA / 800 W



- The Sierra XC 10 is a triple port converter.
- Each converter can supply 800 W on any AC, DC or combination of both AC and DC output ports. AC output load is the highest priority.
- The LED indicates the converter status.
- The module is equipped with soft start.
- 366.5 mm (D) x 144 mm (W) x 85.7 mm (H).
- 3.85 Kg.

5.1.1 Specifications

Sierra XC 10 - 48/230	
Part Number	T731730101
Cooling / Ingress protection	Natural convection / IP65-NEMA 4
MTBF	200 000 hrs (MIL-217-F) at 30°C ambient and 80% load
Dielectric strength DC/AC	4300 Vdc
RoHS / Material (casing)	Compliant / Aluminium
Operating T° / Relative Humidity	Compliant to ETSI 300-019-1-4 class 4.1E -40°C to +70°C derating above 50°C / 0-100%
Storage T° / Relative Humidity	Compliant to ETSI 300-019-2-4 class 4.1E -40°C to +70°C / 0 to 100%
Shock & Vibration	Design for on board vehicles and ship
Altitude above sea without de-rating of power	< 1500 m / derating > 1500 m – 0.8 % per 100 m / max 4000 m
AC Input Data	
Nominal voltage (AC) / Current / Power (AC+DC)	230 Vac / Max 4.4 Amps / 1 kW
Voltage range (AC)	150 - 270 Vac (derating below 185 Vac)
Brownout	800 W at 185 Vac linear decreasing
Power factor / THD	> 99% / < 3%
Frequency range (selectable) / synchronization range	50 Hz (range 47 – 53 Hz) / 60 Hz (range 57 – 63 Hz)
DC Input Data	
DC voltage: Nominal / range	48 Vdc (40 - 60 Vdc)
Nominal current (at 48 Vdc and 800 W output)	17.92 A

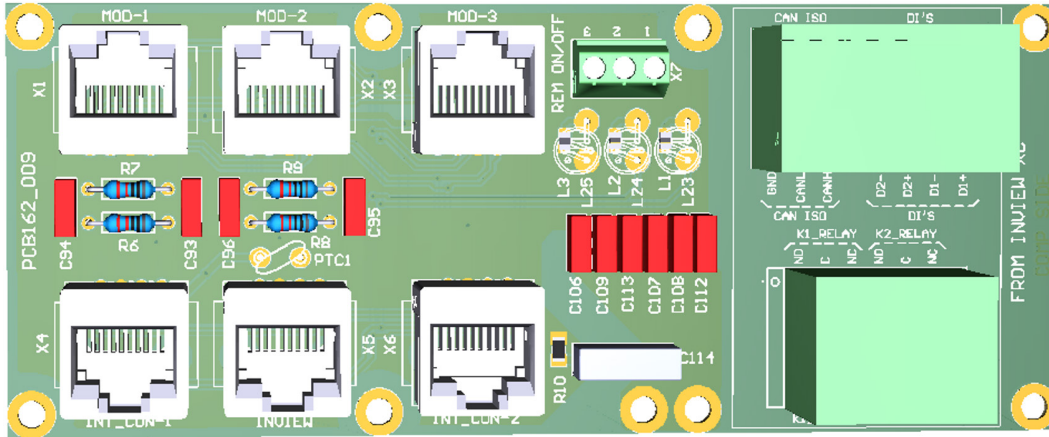
Maximum input current (for 15 seconds) / voltage ripple	26.9 A / < 10 mV RMS
AC Output Data	
Efficiency AC to AC (EPC) / DC to AC / AC to DC	96% / > 93% / > 93%
Nominal voltage AC (Adjustable)	230 Vac (200 - 240 Vac)
Frequency / frequency accuracy	50 or 60 Hz / 0.03%
Nominal Output power	1000 VA / 800 W @ 230 Vac
Short time overload capacity	150% (15 seconds)
Admissible load power factor	Full power rating from 0 inductive to 0 capacitive
Total harmonic distortion (resistive load)	< 1%
Load impact recovery time (10% - 90%)	≤ 0.4 ms
Nominal current	4.34 A @ 230 Vac
Crest factor at nominal power	3 : 1 for load P.F. ≤ 0.7
Short circuit clear up capacity at AC input / On battery	38.88 A for 20 ms (Peak)
Short circuit current after >20 ms	12.48 A for 15 seconds (Peak)
AC output voltage stability	±1% from 10% to 100% load
DC Output Data	
Nominal voltage (range)	53.5 Vdc (44 - 60 Vdc)
Maximum power	800 W
Maximum current at 48 Vdc	17.92 A
Efficiency AC to DC	> 93%
Reverse polarity protection	Yes
In Transfer Performance	
Max. Voltage interruption / total transient voltage duration (max)	0 sec / 0 sec
Signalling & Supervision	
Display	Synoptic LED
Monitoring device / Part Number	Inview XC with IP 65 (optional) / T602004140 Inview GW - DIN version / T602004000 Inview S for indoor / T602004100 Inview X for indoor / T602004200
Accessory / Part Number	Junction kit for Sierra XC Parallelization / T734730010
Safety / EMC / Environment	
Safety	EN62040-1
EMC	EN 61000-4-2 / EN 61000-4-3 / EN 61000-4-4 / EN 61000-4-5 / EN 61000-4-6 / EN 61000-4-8 ETSI EN 300386 v1.9.1

NOTE! Inview XC and Inview GW specifications are available in their respective datasheets.

Inview XC - <https://datasheet.cet-power.com/CET - Monitoring - Datasheet - Inview - EN.pdf>

Inview GW - <https://datasheet.cet-power.com/CET - Monitoring - Datasheet - Inview GW - EN.pdf>

5.2 Junction Kit for Sierra XC Parallelization



A junction kit (for Sierra XC parallelization - part number T734730010) can be used to put up to three Sierra XC modules in parallel with one single Inview XC monitoring device. More Sierra XC modules can be parallelized with one single Inview XC, by interconnecting several junction kits.

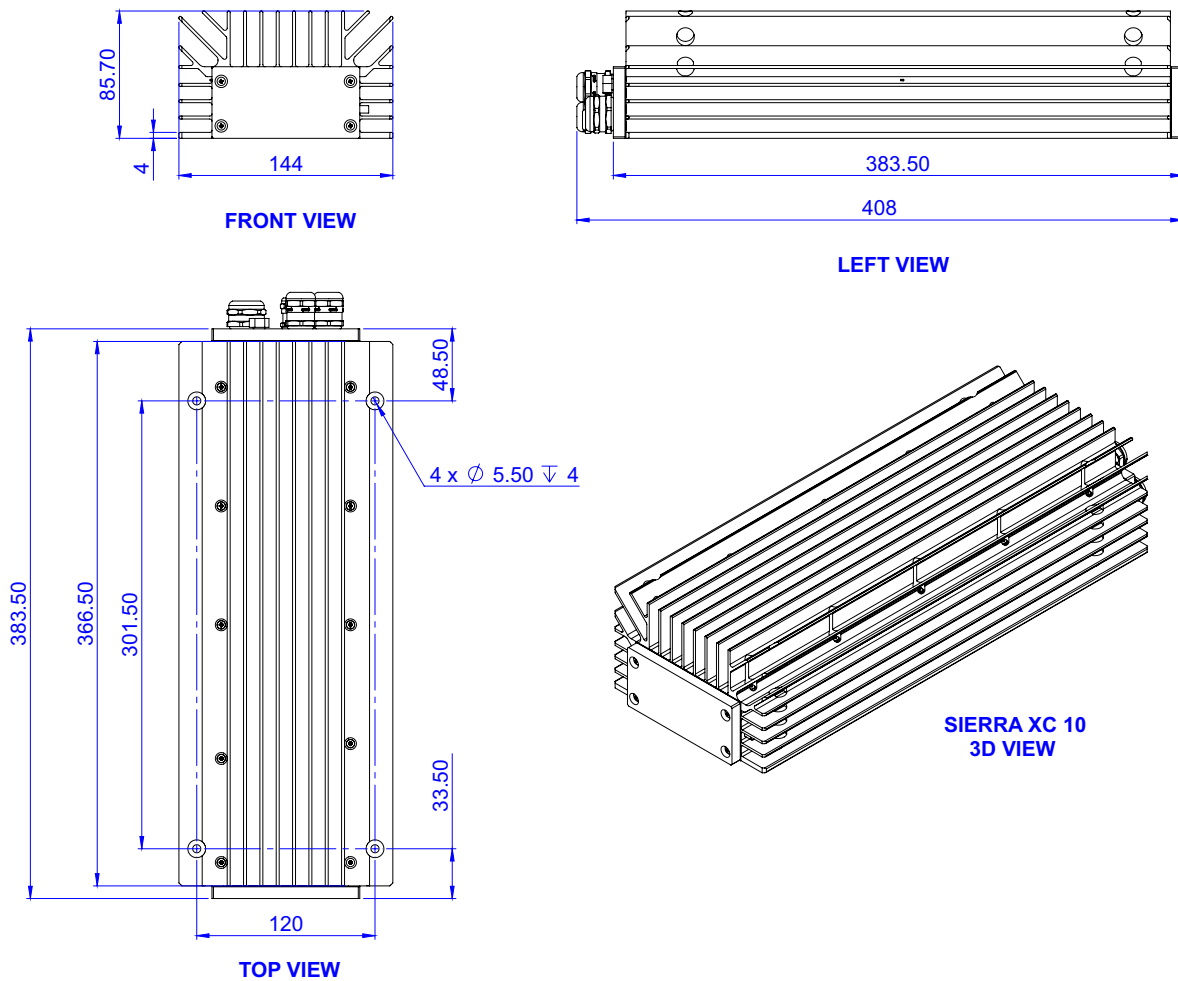
The Inview XC must be connected to a junction kit through its CE+T COM port. The power supply of the Inview XC will pass through the junction kit.

The junction kit enables to power ON or OFF the AC output via the Remote ON/OFF function. For more information about the remote ON/OFF function, refer to section “6.4.5 Remote ON/OFF”, page 23.

6. Installation

- Read safety instructions prior starting any work.

6.1 Sierra XC 10 dimensions

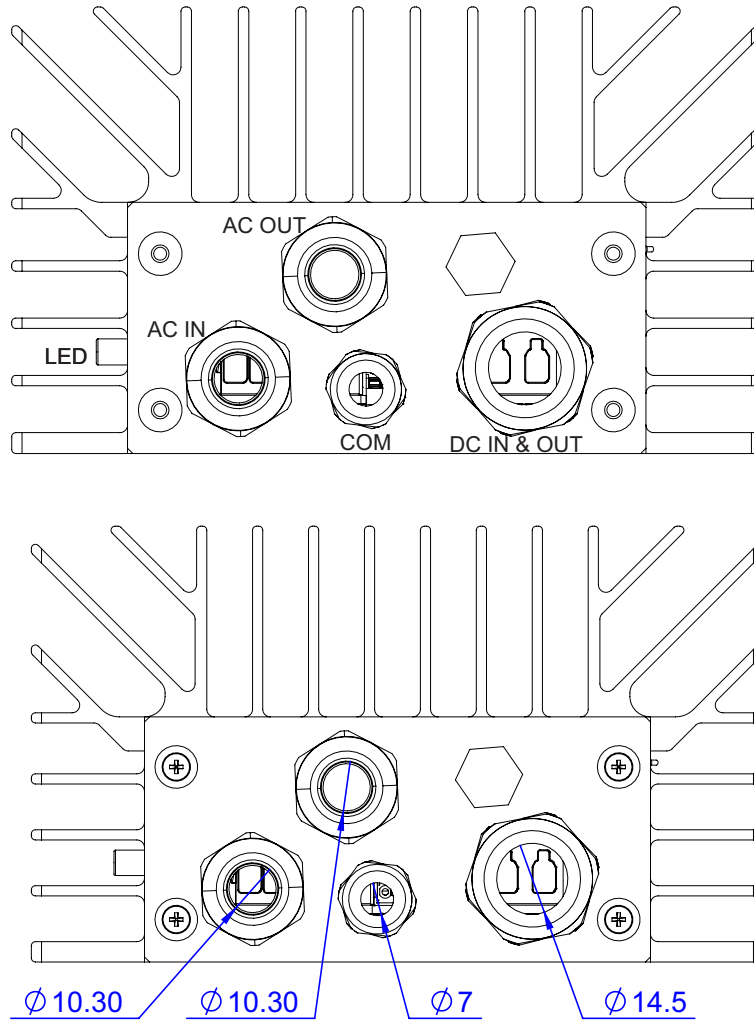


Width = 144 mm

Height = 85.7 mm

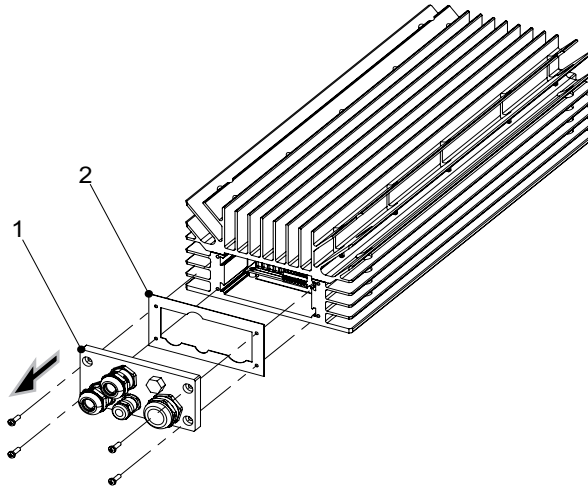
Depth = 383.5 mm

6.2 Front Panel Connectors

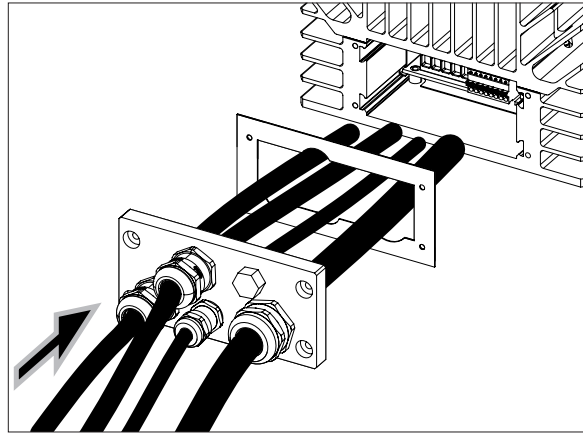


6.2.1 Cabling sequence

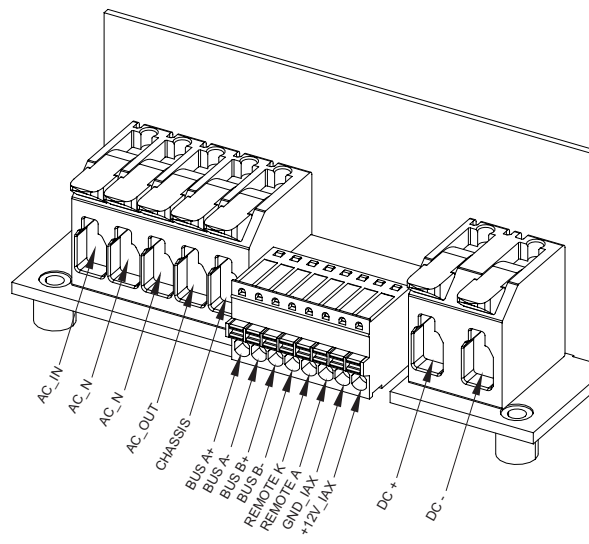
- Unscrew the four screws, remove the cover (1) and plate (2).



- Route all the cables through their respective grommets.

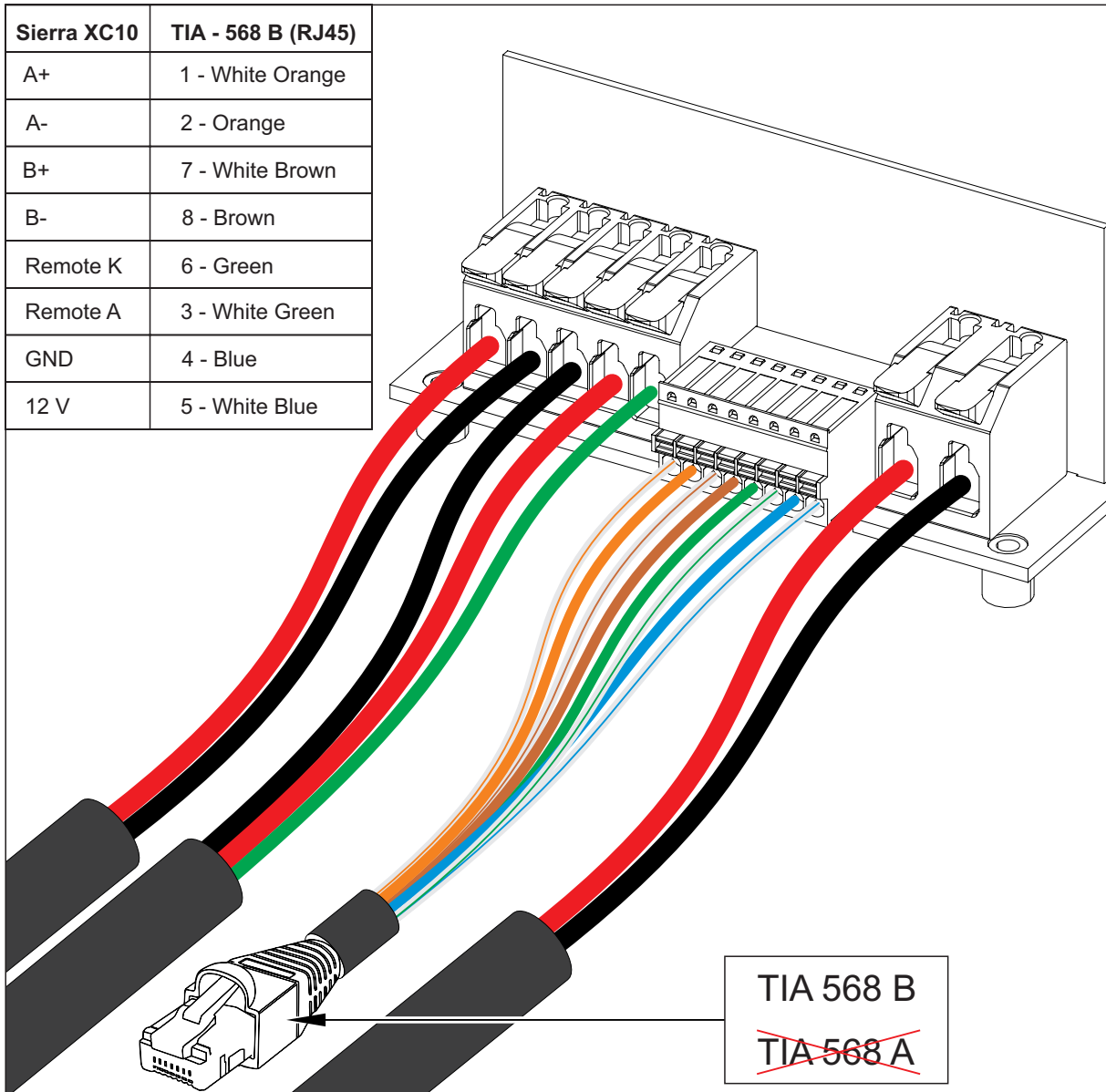


- Insert the cables into their respective connectors.

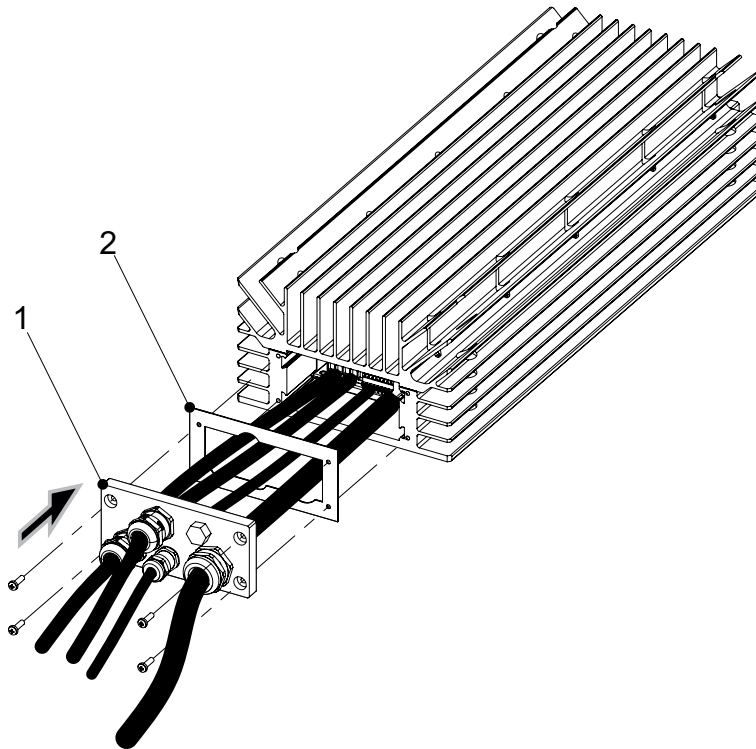


- For communication cable, use the connector type TIA 568 B.

Make sure to insert the different color cables to the respective connector holes as shown in the below picture.

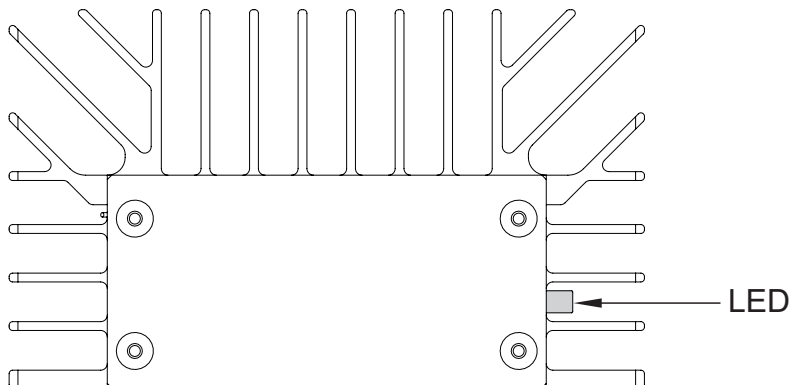


- Fix the plate (2) and the cover (1) by installing the four screws.



- The cabling is complete now and the module is ready to use.

6.2.2 LED indication - Alarm status



Status	Description
OFF	Source not present
Permanent Green	Working fine, No alarm, No error, No derating
Blinking Green	Alarm is present on any port
Permanent Orange	Derating on any port
Blinking Red	Error is present on any port (recoverable)
Permanent Red	Error is present on any port (non-recoverable)

6.3 System Start-up

A DC source or battery is needed on the DC port to start up the system. The system has to be started up on DC power (not on AC-in) to avoid inrush currents on the module.

6.4 Sierra XC Connection with Controller

6.4.1 Control and Monitoring devices - Inview XC and Inview GW

Sierra XC 10 can be monitored through Inview XC or Inview GW. The Inview XC has IP65 protection, whereas the Inview GW is a compact, single window monitoring device.

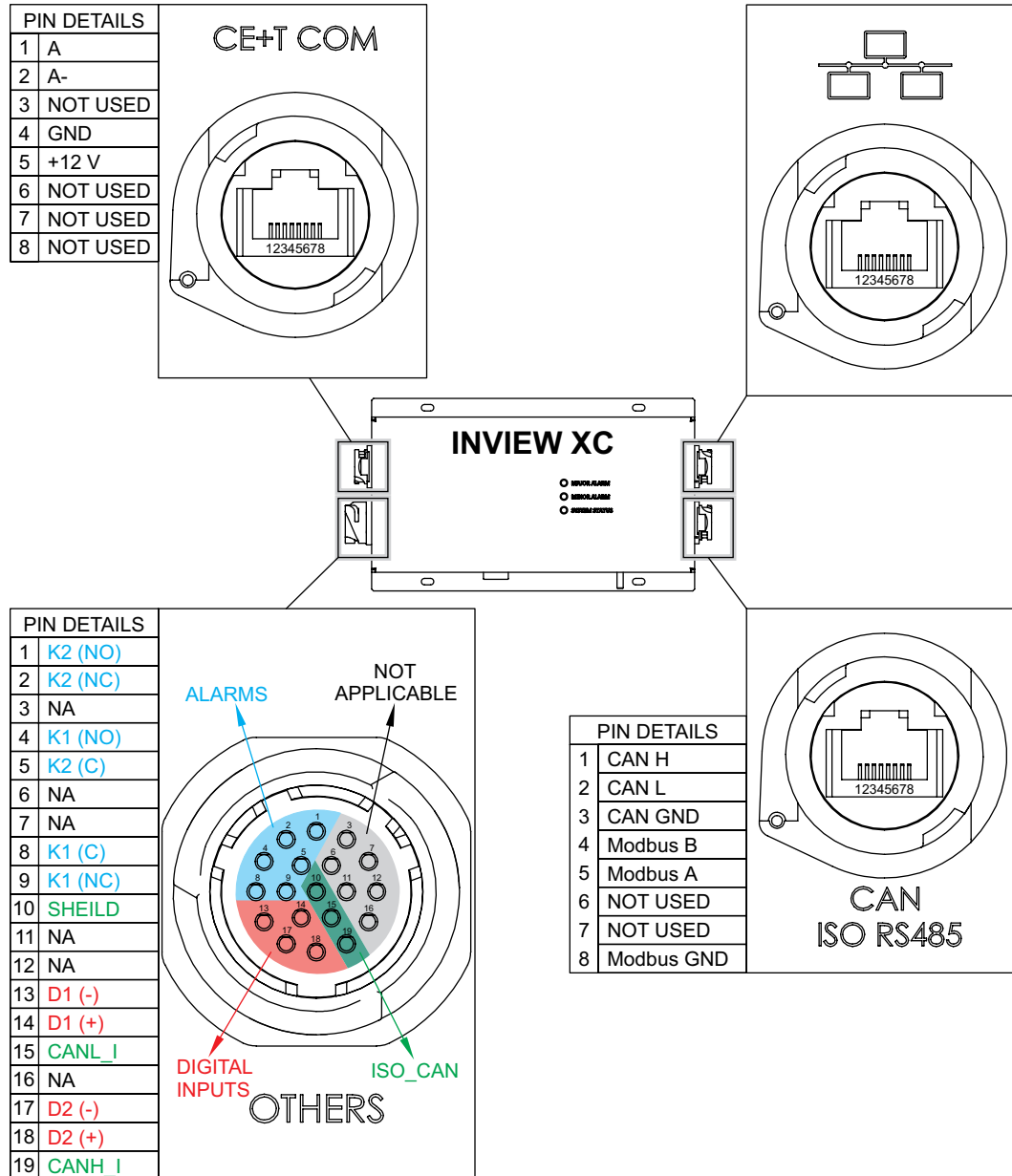


For more details about these monitoring devices, refer to Inview and Inview GW user manuals.

Inview XC - <https://datasheet.cet-power.com/CET - Monitoring - User Manual - Inview - EN.pdf>

Inview GW - <https://datasheet.cet-power.com/CET - Monitoring - User Manual - Inview GW - EN.pdf>

For Inview XC, IP65 rated NLINK0 connectors must be used. Refer to the below picture for Inview XC connectors' pin details.



Note! To solder pins together on the Inview XC side of the 19 pin connector, use a magnifier to view the pin numbers. The numbering corresponds to the pin details given here above.

6.4.2 Controller Power Supply

The Inview XC and Inview GW are powered up by the 12V of the Sierra XC converter via the CE+T COM port. There is no need for an additional auxiliary power supply.

6.4.3 System with one Sierra XC module

In a single module Sierra XC system with an Inview (XC or GW) controller, the communication goes through the CE+T COM port. Use an RJ45 cable between the 8 pin connector of the Sierra XC10 and the CE+T COM port of Inview. Use the cable coloring according to the illustration in page 18 .

If you want to use the remote ON/OFF functionality, add a junction kit and refer to next two sections for the connections.

6.4.4 System with several Sierra XC modules

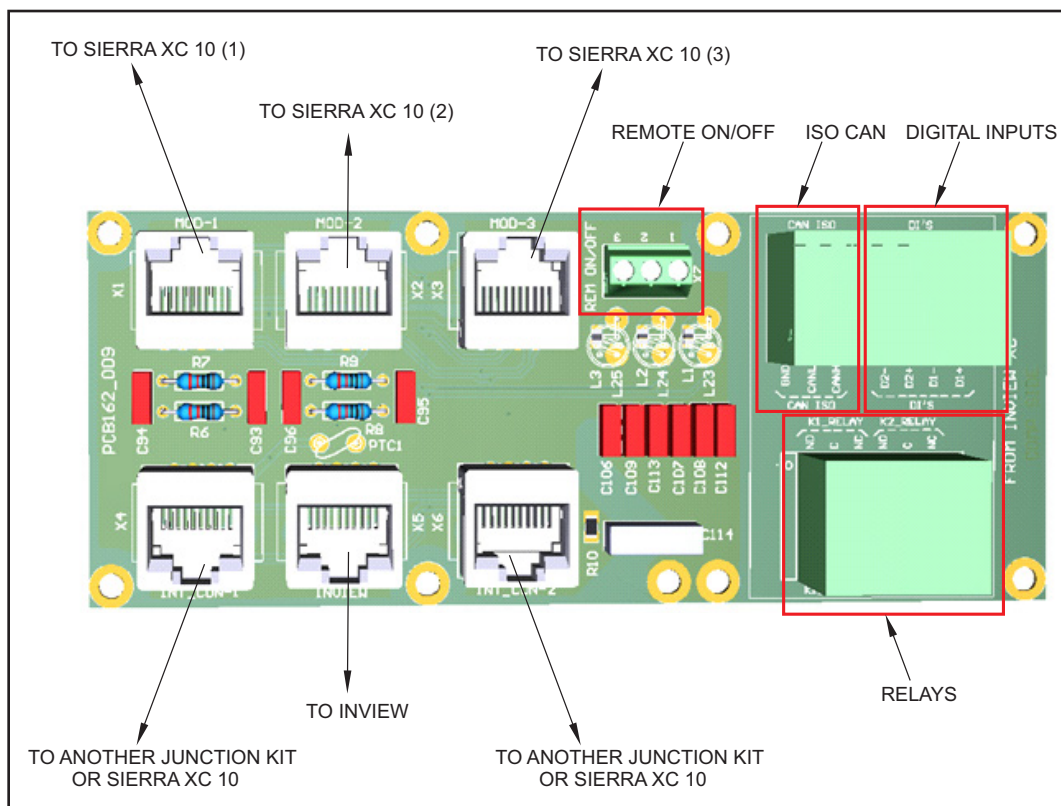


Figure 1: Communication wiring details

The internal bus connectors are sensitive and special caution must be taken during installation to keep them out of harms way.

The internal BUS cables of the modules are connected to each other through a junction kit. Junction kits can be connected to one another by RJ45 cables. An Inview controller (Inview X or Inview GW) must be connected to the board by using its CE+T COM port.

The junction kit is also composed of 2 potential free Digital Inputs, 2 Output Relays, 3 pins for iso CAN communication and 3 pins for the Remote ON/OFF functionality, which is further described in the following section.

6.4.5 Remote ON/OFF

The remote ON/OFF connection is present on the junction kit. Refer to “Figure 1: Communication wiring details”, page 22 for more details.

- The function of remote ON/OFF is to turn off the system’s output.
- AC and DC inputs are not affected by the remote ON/OFF function.
- Use a junction kit to connect the remote ON/OFF. The remote ON/OFF is wired at the 3 points terminal block of the junction kit (pins 1-2-3). When the remote ON/OFF switches to OFF, it will turn off all interconnected modules.
- The remote ON/OFF requires changeover relay/contactors, one input opens as the other closes. If both transitions are not picked up the status is not changed.
- When DC input is only present, Remote ON/OFF will switch OFF the module output and enter the standby mode. Standby mode power consumption shall be ≤ 30 W.

Relay/Contactor characteristics for Remote ON/OFF

- Signal voltage +5 VDC (galvanic insulated)
- Max wire size 1 mm²

Functional table for remote ON/OFF function (3 points connector on the junction kit)

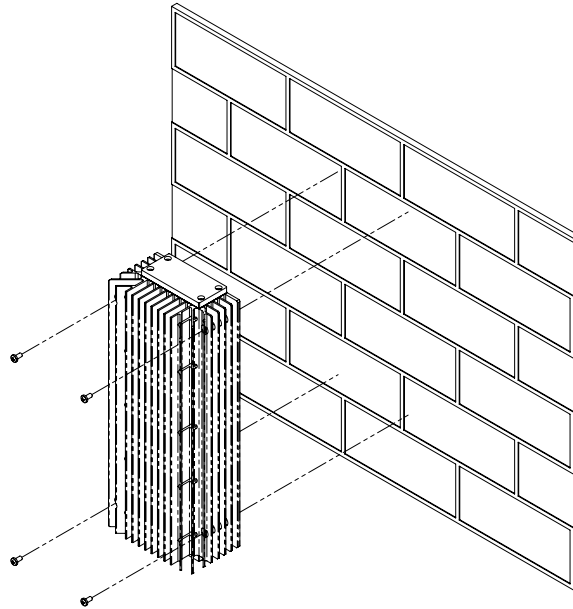
#	Pin 1-3	Pin 2-3	Status	LED Indication
1	Open	Open	Normal operation	Green
2	Closed	Open	AC output OFF	Red
3	Open	Closed	Normal operation	Green
4	Closed	Closed	Normal operation	Green

Pin 2 : Remote A

Pin 3 : GND

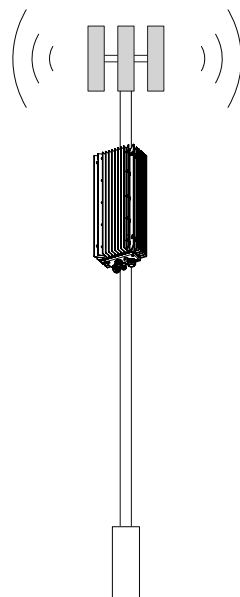
Pin 1 : Remote K

6.5 Wall mounting



- Clean the wall surface
- Lift up and hold the module in position, and mark the holes.
- Drill holes on the marked points.
- Fix the module on the wall, using the screws.

6.6 Pole mounting



Use pole mounting kits to mount the Sierra XC on a pole. CE+T suggests to use the PK-121 Pole Mount Kit from Polycase (with a rail length of 305 mm), but any other pole mounting kit could also be used. Refer to section “6.1 Sierra XC 10 dimensions”, page 15 for the fixations’ hole spacing.

6.7 Cabling

6.7.1 DC input connection

Model	DC input current	DC breaker	Cable size	Max dia. of the external gland
1000 VA	18 A	32 A	2 x 6 mm ²	14 mm

6.7.2 AC input connection

Model	Input current at 230 Vac	AC breaker	Cable size (3 core)	Max dia. of the external gland
1000 VA	4.4 A	6 A	4 mm ²	10 mm

6.7.3 AC output connection

Model	Output current at 230 Vac	AC breaker	Cable size (3 core)	Max dia. of the external gland
1000 VA	4.4 A	6 A	4 mm ²	10 mm

6.7.4 RS485 connection

The maximum size of the cable is 0.5 mm² (8 core).

6.8 Grounding

“PE CHASSIS GROUND” 

PE Chassis ground shall be wired to MET or distributed earth bar connected to MET, according to local regulations.

6.9 Hardware Connections

Sierra XC 10 modules are connected with Inview (Inview GW or Inview XC) as shown in “Figure 1: Communication wiring details”, page 22

6.9.1 Surge Suppression (optional)

The mains (AC) supply of the modular converter system shall be fitted with suitable Lightning surge suppression and Transient voltage surge suppression for the application at hand. Manufacturer’s recommendations of installation shall be adhered. It is advisory to select device with alarm relay for function failure.

Indoor sites are considered to have a working lightning surge suppression device in service.

- Indoor sites : Min Class II.
- Outdoor sites : Min Class I + Class II or combined Class I+II.

7. Manual By-Pass (MBP) - (Optional)

Manual By-Pass has to be operated by trained people only.

When system is in manual by-pass the load is subjected to mains voltage without active filtering. An output alarm is activated when the system is in manual by-pass.

The Manual By-Pass cannot be operated remotely.

The manual by pass operates via manually operated switches to create a short circuit from the AC main input directly to the output AC distribution. Standard manual by-pass is “Make before Break”. When engaged or disengaged, no disturbance is transmitted to the load.

When MBP is engaged, converter modules are switched off and can be removed without impacting the load. The battery supply is not physically disconnected. After disconnecting the battery supply (by opening the battery breakers), the modules are safe for maintenance.

Warning: When the system is in by-pass, the load is subjected to AC main disturbances. Before engaging manual bypass, make sure the voltage difference between AC IN and AC OUT should be less than 5 Vac to limit the inrush current.

7.1 MBP Auxiliary connection

If manual by pass is installed in the system and its auxiliary should be wired as per the following:

- Connect Aux3 of MBP to Digital Input 01 of the controller, so that the controller gets the information when MBP is engaged. Refer to page 25 for the pin details. The Digital Input 01 must be configured through the Inview web interface. Refer to the Inview user manual for more information.
- Connect Aux1 and Aux2 of MBP to Remote ON/OFF terminal on the Junction Kit or on Sierra XC directly if it is used as standalone.

Note: Auxiliary (Aux) numbers may vary depending upon the MBP

The Sierra system has a single rotary switch or three individual switches depending upon the system configuration, and the operation also varies for each model.

Refer to “13. Appendix”, page 32 for connection details.

8. Finishing

- If cabinets are used, make sure that they are properly fixed to the floor and connected to Ground.
- Make sure that all DC and AC input breakers are switched OFF.
- Make sure that all cables are according to recommendations and local regulations.
- Make sure that all cables are strained relieved.
- Make sure that all breakers are according to recommendation and local regulations.
- Make sure that DC polarity is according to marking.
- Re tighten all electrical terminations.
- Make sure that no converter/controller positions are left open.
- Make sure that the Remote ON/OFF is appropriately wired according to local regulations.
- Make sure that the point of AC supply meets local regulations.

9. Commissioning

The DC breaker is a protection device. Modules are plugged in a system and DC breaker is then engaged. Please make sure the corresponding DC breaker is engaged in the ON position. Failure to observe this rules will result not to have all module operating when running on DC and have module failure when AC input recover from fault condition.

Installation and commissioning must be done and conducted by trained people fully authorized to act on installation.

It is prohibited to perform any isolation test without instruction from manufacturer.

Equipments are not covered by warranty if procedures are not respected.

9.1 Check list

DATA	
Date	
Performed by	
Site	
System serial number	
Module serial numbers	
Inview XC/GW Serial number	
ACTION	
	OK/ N.OK
Check the commercial AC voltage before closing the AC input breaker.	
Switch ON the commercial AC	
Check the DC power supply and switch ON the DC breakers (Ensure the DC Polarity)	
Check if converters are working (Green led)	
Check output voltage (on bulk output or on breaker)	
Power ON if more modules are connected in parallel (3to 6 modules) one by one	
Check if all converters are working properly	
Check if system has no alarm (Disable the alarm if any)	
Set the Battery parameters (as per OEM datasheet) mainly on charging voltage and current (Only with Inview XC)	
Check the Battery charging status	
Check the Battery discharging status by disconnecting the AC Input power supply	
Read configuration file and review all parameters. Some parameters should be adapted according to the site condition.	
Test on load (if available)	
Check if display working properly (Inview)	
ALARM	
Switch ON AC input and DC input and check that no alarm are present	
Switch OFF AC input (commercial power failure) and check the alarm according to the configuration	
Check the different digital input according to the configuration (when used)	
If the converters are working in normal condition, save the configuration file and clear all the event logs	

10. Trouble Shooting and Defective Situations Fixing

10.1 Trouble Shooting

Converter module does not power up:

- Check AC input present and in range (AC breakers)
- Check DC input present and in range (DC breakers)
- Check that module(s) is (are) in OFF state
- Check for loose terminations

Converter only run on AC or DC:

- Check AC input present and in range (AC breakers)
- Check DC input present and in range (DC breakers)
- Check the configuration and setting
- Check threshold level(s)

No output power:

- Check output breaker and module output status

All OK but I have alarm:

- Check the type of event and log file in the controller

No alarm:

- Check relay delay time of alarms in the controller
- Check configuration file

For any major issues, contact your local supplier or CE+T customer support - customer.support@cet-power.com.

10.2 Defective modules

- A repair request should follow the regular logistics chain:
End-user => Distributor => CE+T Power.
- Before returning a defective product, a RMA number must be requested through the <http://my.cet-power.com> extranet. Repair registering guidelines may be requested by email at repair@cet-power.com.
- The RMA number should be mentioned on all shipping documents related to the repair.
- Be aware that products shipped back to CE+T Power without being registered first will not be treated with high priority! (Label shown here is only for representation)

11. Maintenance

Maintenance should be performed by properly trained people.

11.1 Access Inview GW or Inview XC with Laptop

- Download system LOG FILE and save
 - Analyze log file and correct errors
- Download system CONFIGURATION FILE and save
 - Check/correct configuration file according to operation conditions
 - Check/correct alarm configuration
- Check module internal temperature for deviation between modules
 - Temperature deviation may indicate build up of dust. Clean the module by air suction blower or vacuum cleaner.
- Check module/system load
- Check/Correct inverter mapping (DC group/AC group/ Address)

11.2 Manual check

- Check voltages of AC input, DC input, AC output and DC output using the multi-meter
- When the module is placed inside a cabinet, replace the door filter if more dust is accumulated.
- Take a snap shot of the cabinet and site condition

11.3 Optional

- With an infrared camera check termination hot spots
 - Tighten terminations

11.4 Manual By-Pass

- Make sure AC input source is available during MBP operation. Otherwise the LOAD will be affected.

12. Service

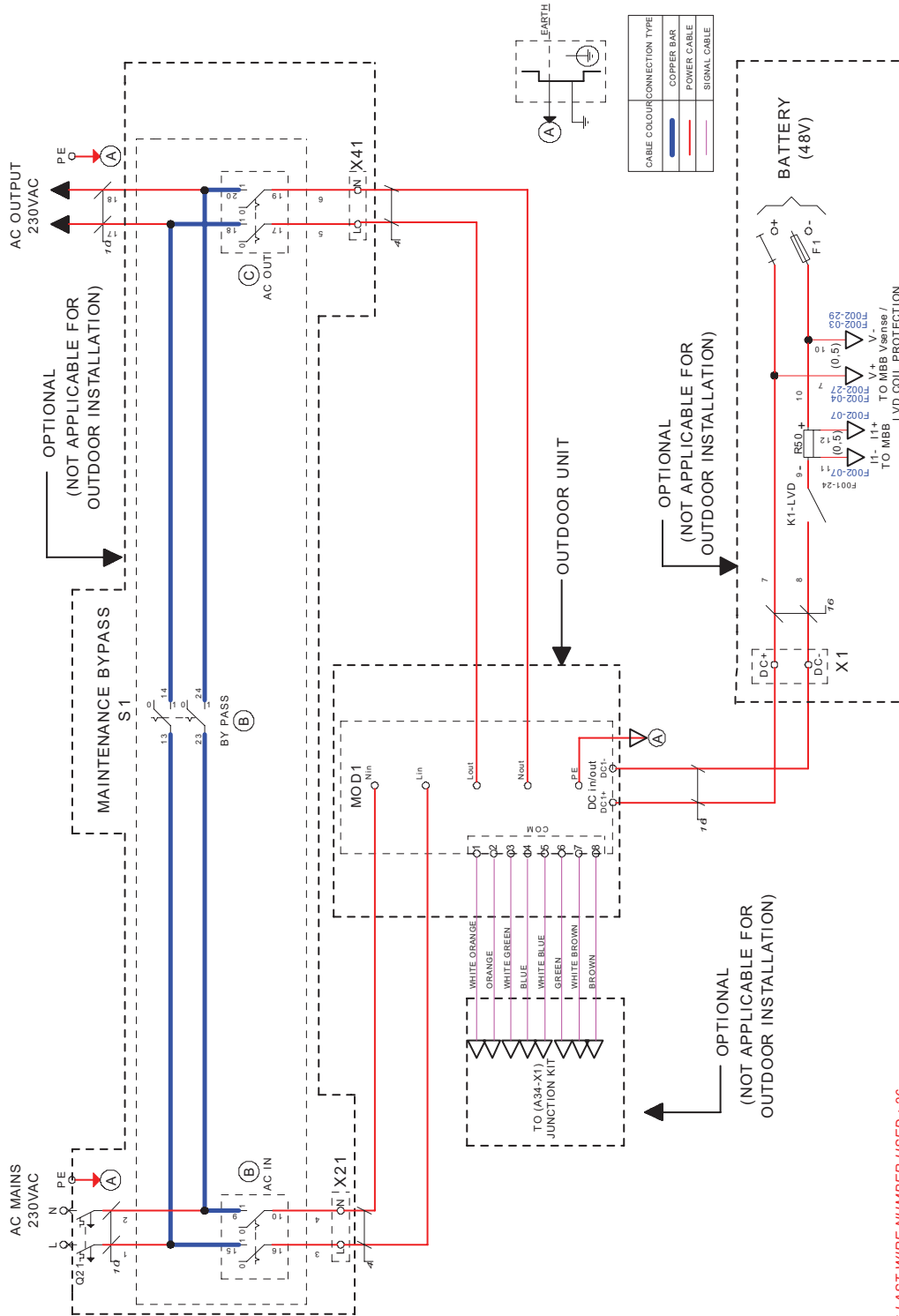
For Service:

- Check Service Level Agreement (SLA) of your vendor. Most of the time they provide assistance on call with integrated service. If such an SLA is in place, you must call their assistance first.
- If your vendor doesn't provide such assistance (*) you may contact CE+T through email: customer.support@cet-power.com

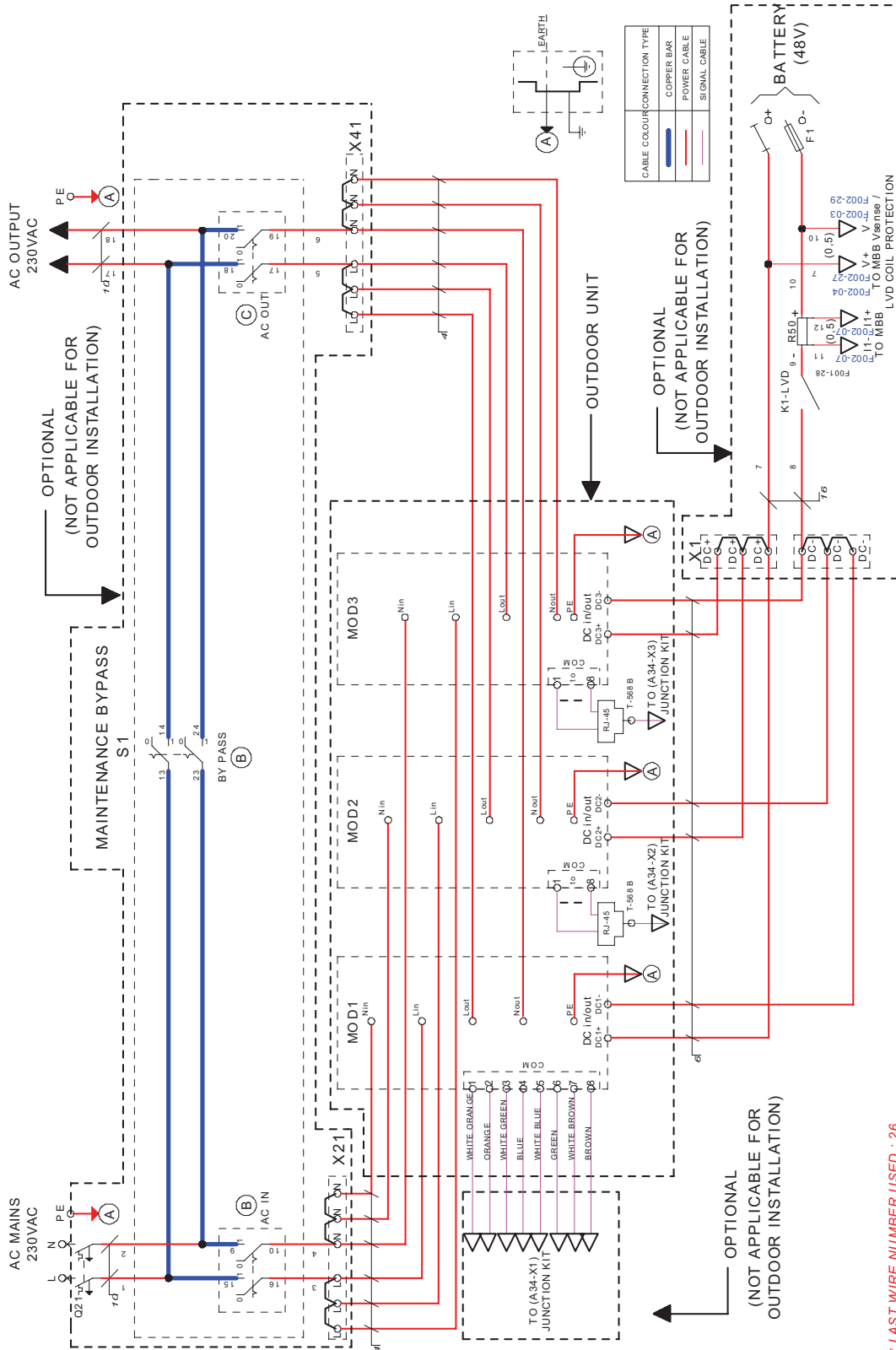
(*) CE+T will redirect your call to your vendor if they have such an SLA in place.

13. Appendix

13.1 Schematic - 1 Phase configuration with 1 'Sierra XC 10' module and Inview XC

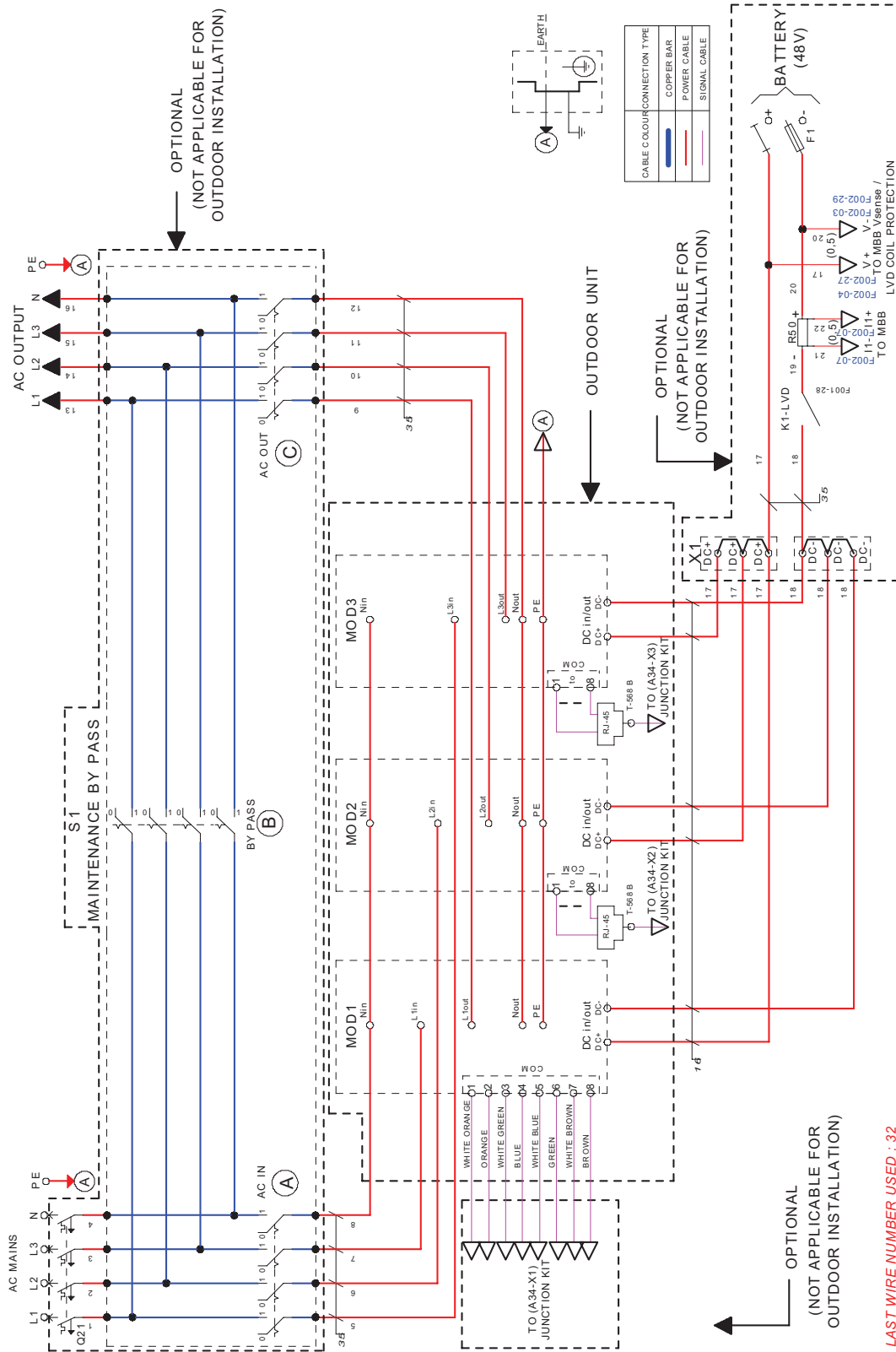


13.2 Schematic - 1 Phase configuration with 3 'Sierra XC 10' modules and Inview XC



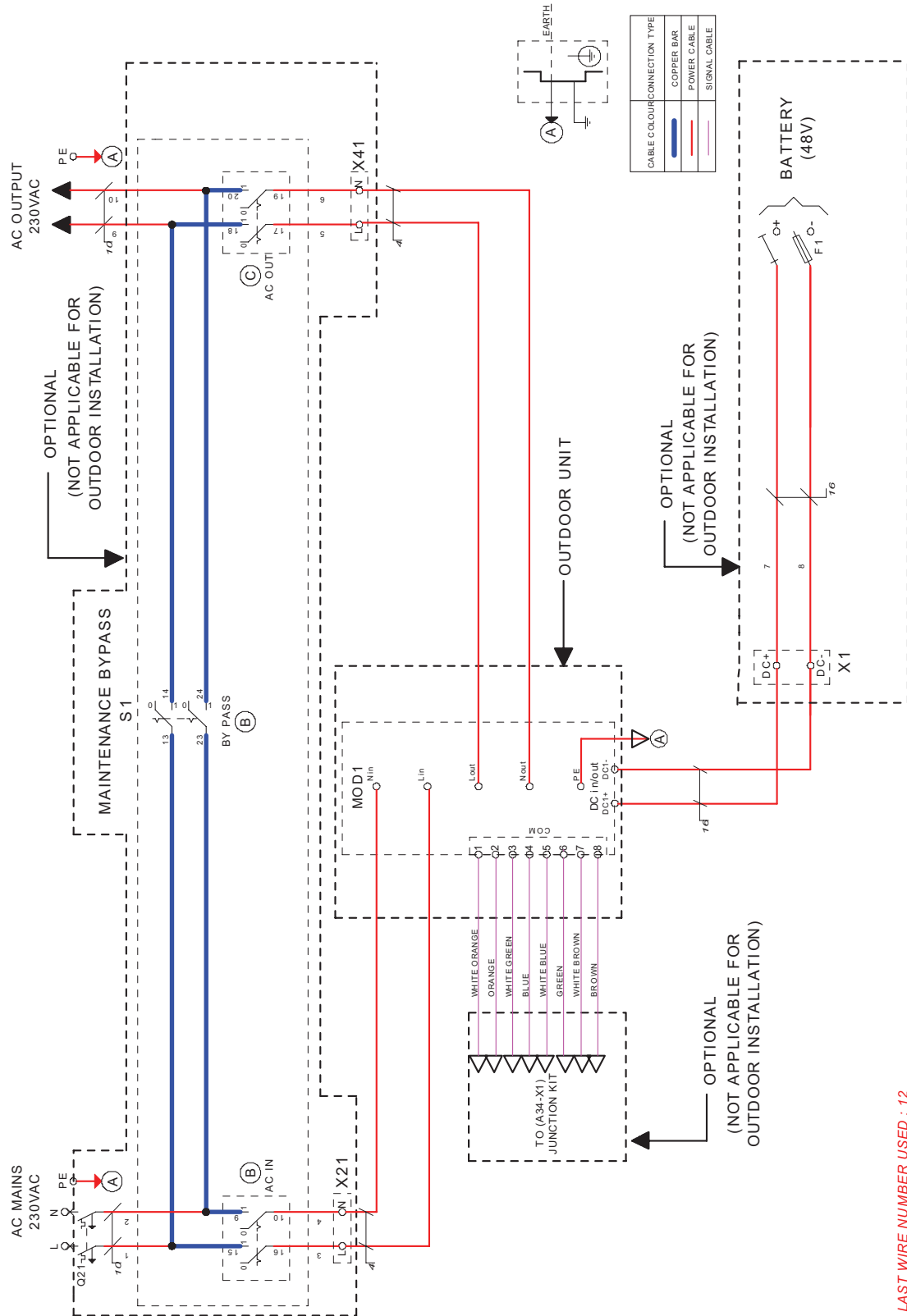
* LAST WIRE NUMBER USED : 26

13.3 Schematic - 3 Phase configuration with 3 'Sierra XC 10' modules and Inview XC



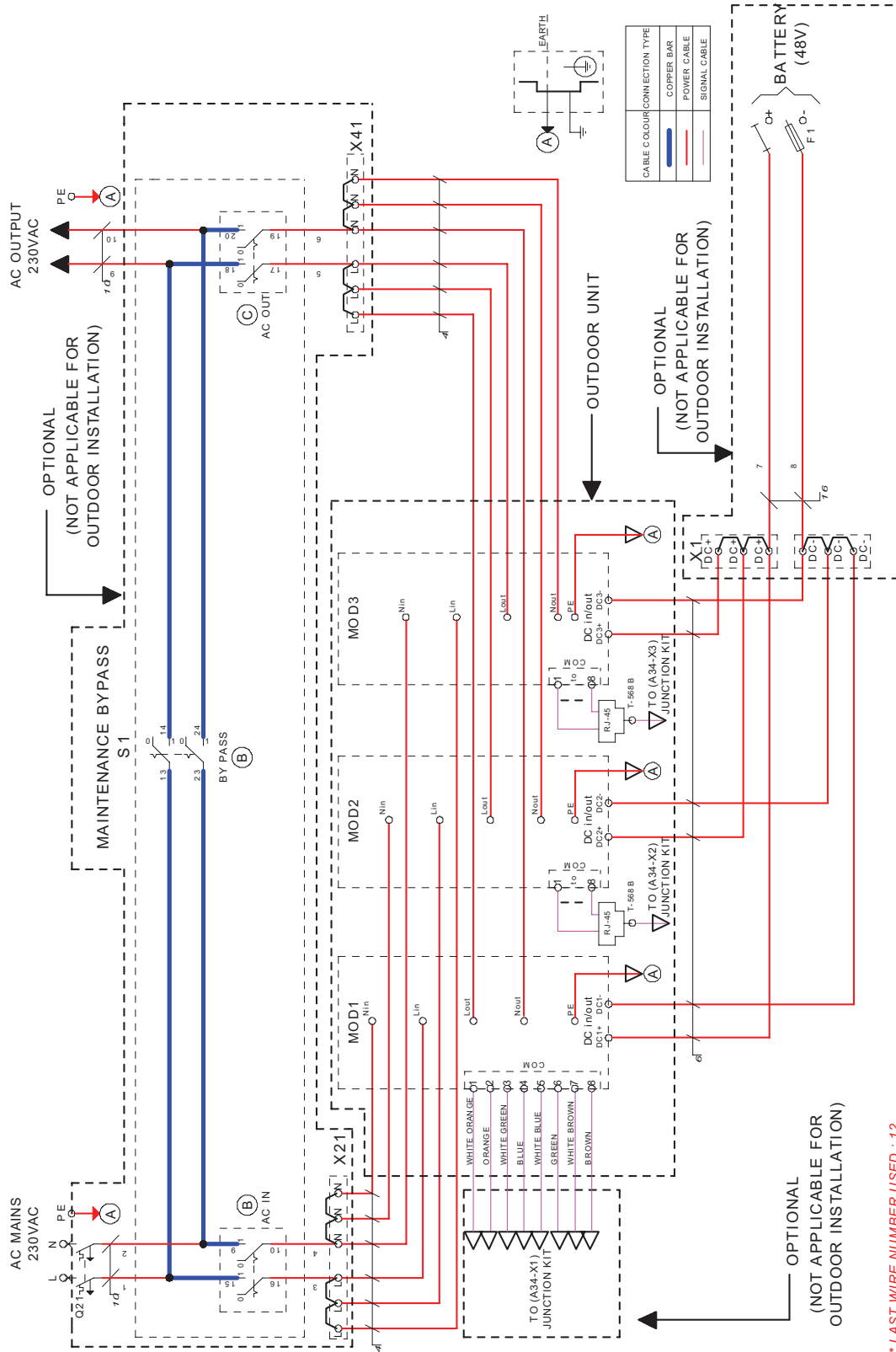
* LAST WIRE NUMBER USED : 32

13.4 Schematic - 1 Phase configuration with 1 'Sierra XC 10' module and Inview GW

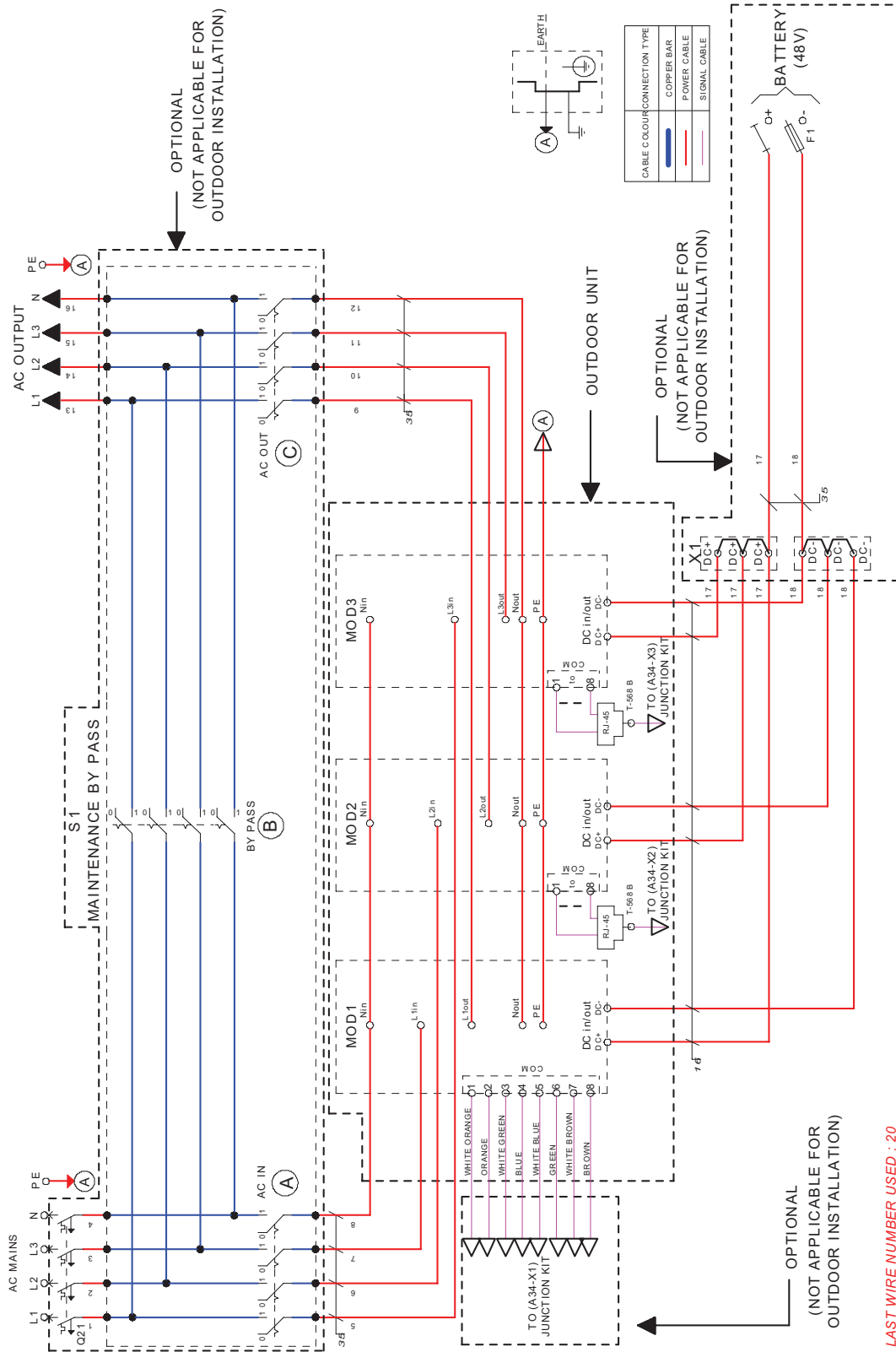


* LAST WIRE NUMBER USED : 12

13.5 Schematic - 1 Phase configuration with 3 'Sierra XC 10' modules and Inview GW

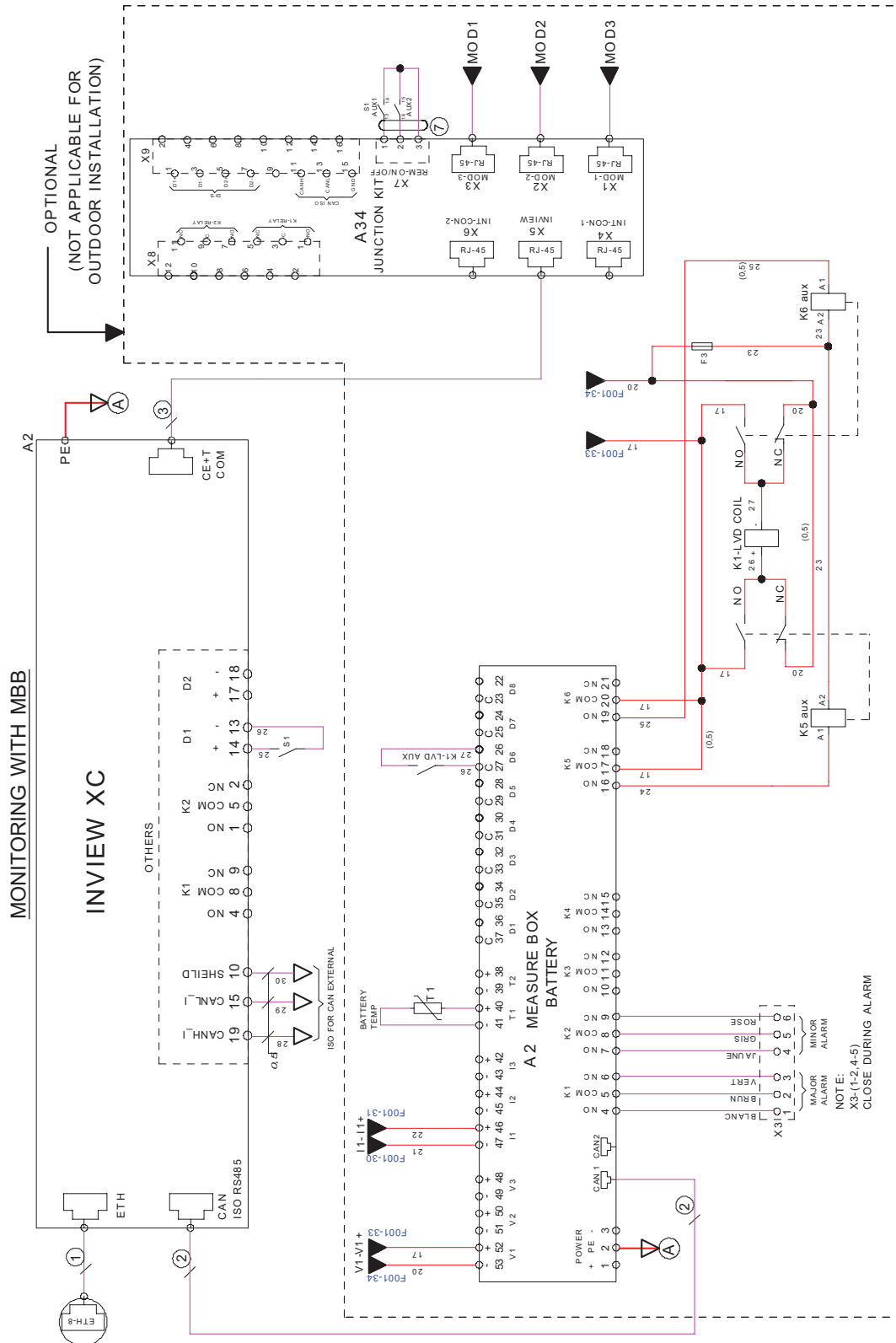


13.6 Schematic - 3 Phase configuration with 3 'Sierra XC 10' modules and Inview GW

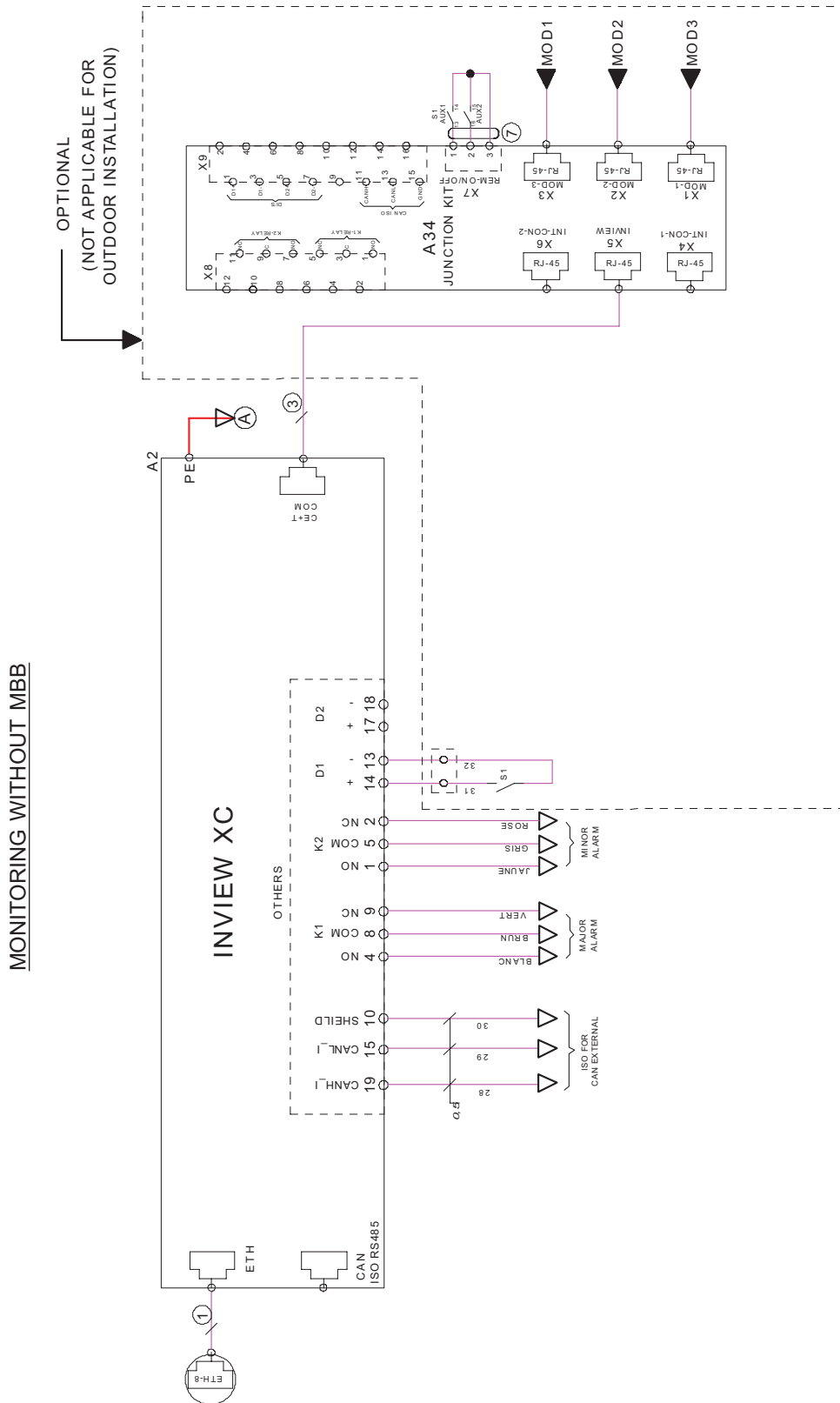


* LAST WIRE NUMBER USED : 20

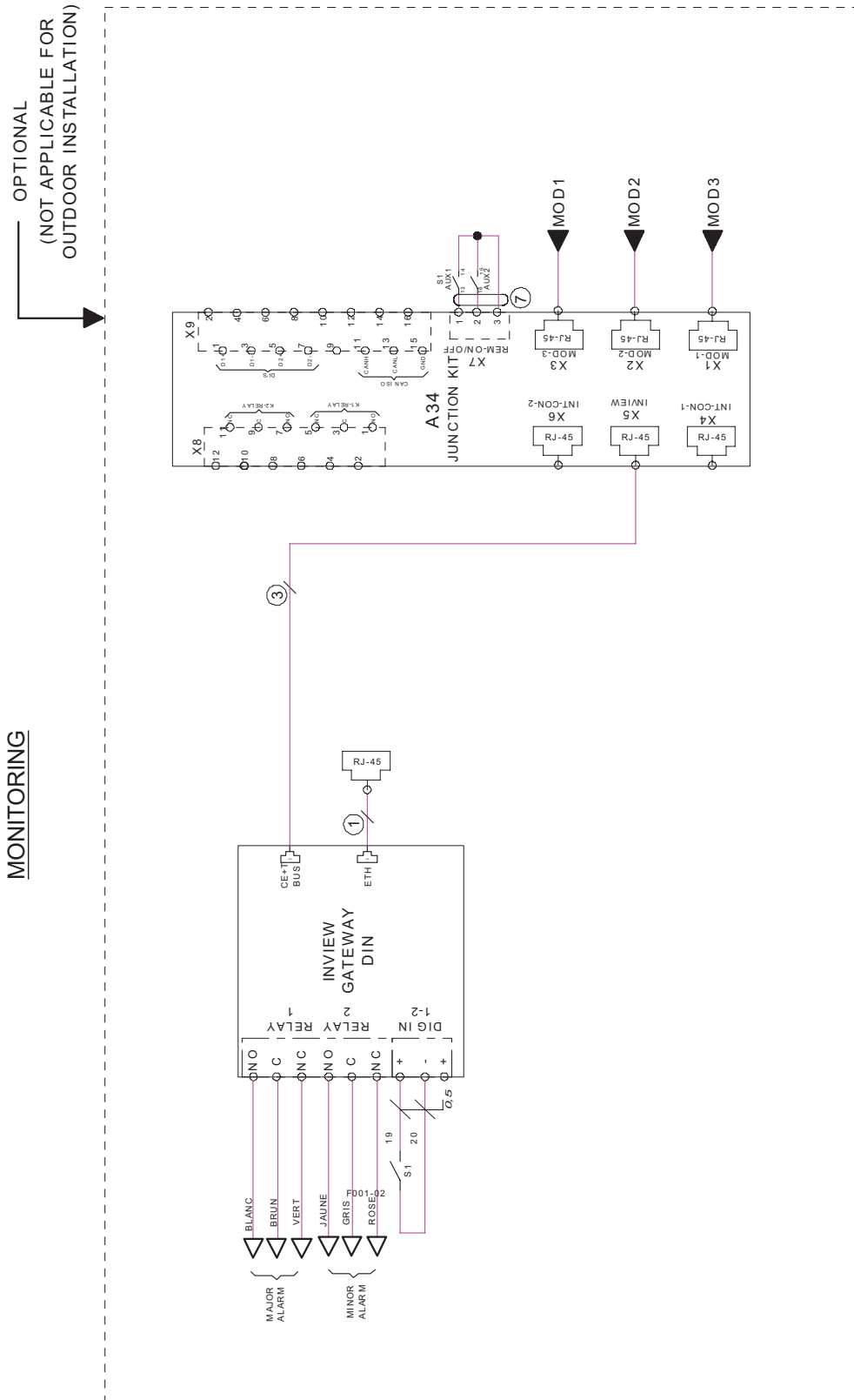
13.7 Schematic - Monitoring connection for Inview XC with MBB



13.8 Schematic - Monitoring connection for Inview XC without MBB



13.9 Schematic - Monitoring connection for Inview GW



13.10 Modules - Parameter List

With Inview, you can access the modules' parameter list and descriptions. Refer to the Inview and Inview GW user manuals to access the Inview web interface.

Inview XC - <https://datasheet.cet-power.com/CET - Monitoring - User Manual - Inview - EN.pdf>

Inview GW - <https://datasheet.cet-power.com/CET - Monitoring - User Manual - Inview GW - EN.pdf>

If you want to have an overview of standard systems' parameters, you can also view the parameters in our Monitoring Emulator - <https://www.cet-power.com/en/monitoring-emulator/>.

Do not hesitate to use the help buttons to get more information about the parameters.

