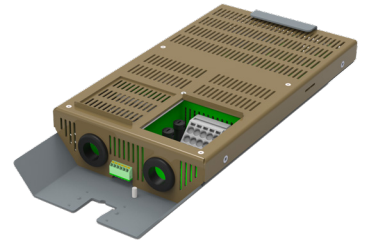


Smart Isolator



CE+T Power's Smart Isolator acts as a connection module for increased power availability.



Technology

The Smart Isolator module is used in the PowerShift Metro® solution, as a connection module to distribute and monitor a balanced power +/- 190 DC line into two “Nodes” (max 8A) and two “Trunks” max 25A . Additionally, the smart isolator increases the power availability of a power distribution line by detecting and isolating faulty lines (Node or Trunk).

By disconnecting the faulty units, the smart isolator enables other healthy equipment to continue working without interruption. It can also report any fault over the link communication lines to the monitoring system (located at the HUB) to ensure rapid and efficient distribution network maintenance. Its main applications are power distribution over multiple equipment installed on poles.

The smart isolator exhibits 2 independent self-configured outputs. Each output is automatically configured either as trunk (maximum current 25 A) or a local power node (maximum current 8 A).

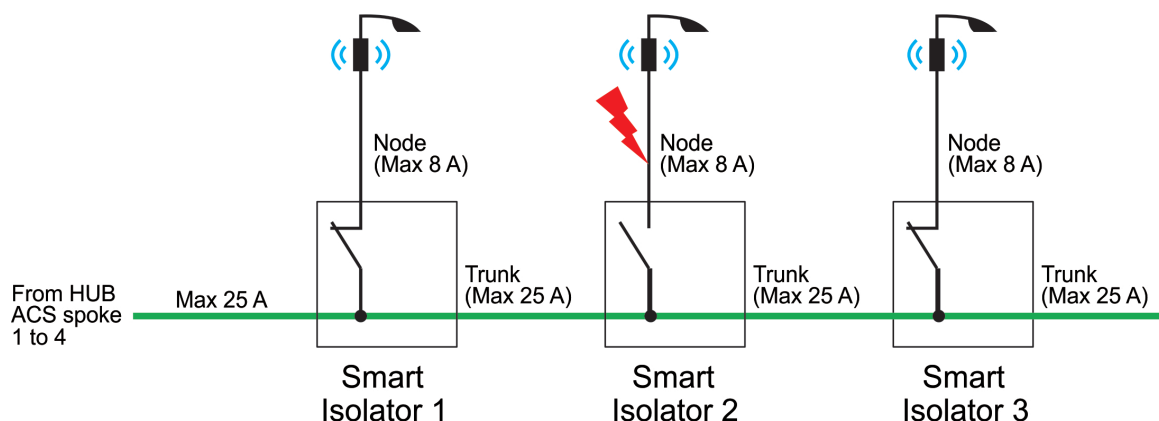
How it works?

The smart Isolator is composed of two sets of measurement and disconnection components that are used to monitor two outputs and connect or disconnect them from the input independently. This disconnection occurs when a fault (overcurrent or ground leakage) is detected on one of the outputs. The corresponding output is then switched OFF automatically, preserving the other output and the source.

In case of ground leakage for maximum one minute, it is automatically reconnected after 10 s to avoid intermittent faults that jeopardize continuity of operation. Additionally, monitoring the status of the smart isolator and manually triggering disconnections can be done through a CAN BUS connection to the monitoring and control equipment located at the hub.

Key features:

- Selectivity
- Continuous operation
- Resilience
- Ease of maintenance



Illustrations are non-binding and may include customized fittings.

Smart Isolator

Electrical Characteristics

Reference Voltage:	+/- 190 Vdc (380Vdc with middle point)
Nominal Input/Output Voltage Range:	+/- 125 Vdc to +/- 200 Vdc (Full power available on trunk lines for input voltages above +/- 75 Vdc)
SELV Start-up:	From +/- 25 Vdc to +/- 30 Vdc
Maximum Operating Range:	+/- 75 Vdc to +/-200 Vdc
Maximum Input Current:	25 A
Maximum Output Current:	Trunk: 25 A / Node: 8 A (non cumulative)
Output / Input Efficiency:	> 99.5% @ +/- 190 V and 25 A total current
Passive Intermodulation (PIM):	< 140 dBc @ 38 dBm

Fault Detection Characteristics

Leakage Current Detection Threshold:	Typically 4 mA (tolerance +/-10%)
Disconnection Time:	Node: <=10 ms/ Trunk: <= 15 ms, max 205 ms (depending position along the trunk line)
Input Overvoltage Protection:	MOV + electronic protection (stop) above 400Vdc (+/- 1 Vdc)
Overcurrent Detection Threshold:	8 A for node and 25 A for trunk (-0% +10%)
Output Overcurrent Protection:	Electronic current limitation on trunk and node outputs +10 A rated fuses on +/- node outputs / No fuse on trunk outputs

Monitoring / Integrity Check

Connection to Monitoring System / Continuity Line:	2 x CAN bus ports / 1 input and 2 outputs (node and trunk)
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Thermal Characteristics

Internal Power Dissipation:	25 W typ. @ Vin = +/- 190 Vdc, Tamb = 25°C / with trunk output load = 20 A and node outputload = 5 A
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Safety Compliance

Electrical Safety:	GR1089 / UL 62368
Insulation Levels:	4250 Vdc (+/- 190 Vdc – COM Lines) / 4250 Vdc (+/- 190 Vdc – CAN Bus) / 2200 Vdc (+/- 190 Vdc – Chassis)

Electromagnetic Compliance

Emissions:	GR-1089 Issue 6 May 2011 (port type 8b for power and port type 5 for communication line)
Immunity / Surge Protection:	GR-1089 Issue 6 May 2011 (port type 8b for power and port type 5 for communication line)

Reliability

MTBF:	> 300,000 hours @ 25 °C per Telcordia SR-332
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Environmental Conditions

Environment:	GR-3108 Class 2
Operating / Storage Temperature (Range):	-40°C to +65°C / -40°C to +70°C
Humidity / Pollution Level:	5% to 85% relative humidity, non-condensing
Altitude (operating):	Max. 6000 ft (2000 m)above sea level
Atmospheric Pressure (Storage):	70 to 110 kPa

Physical Characteristics

Dimensions:	L = 391 mm, W = 185 mm, D = 67 mm
Weight / Casing Material:	3 kg / Steel with corrosion protection
Cooling:	Natural convection cooling without fan
RoHS / WEEE:	Compliant to RoHS Directive 2011/65/EU / WEEE Directive 2012/19/EU

Connections

Power Input / Output Connections X101 & X102:	Terminal block, 5 poles, 2 rows, push-in cage clamp (wire trap) / Compatible with solid conductors 0.5...10 mm ² (20...8 AWG) wire / Compatible with flexible conductors 0.5...10 mm ² (20...8 AWG) wire / Stripping length: 13...15 mm (0.5...0.6 inch)
Grounding Connection / CAN Bus Connection X5 & X6:	M5 earth stud / Double RJ45 connector (input/output)
Access Protection:	Separate positive and negative connections with physical means to prevent both wiring chambers to be accessible at the same time
Communication/Continuity Connection X1:	Terminal block, 10 poles, push-in cage clamp (wire trap) / Compatible with solid conductors 0.2...1.5 mm ² (24...16 AWG) wire / Compatible with flexible conductors 0.2...1.5 mm ² (24...16 AWG) wire / Stripping length: 0.4 inch

Markings

Trademark / Part Number / Traceability:	CE+T Power / T602006020 / Serial number
Ratings / Approval Markings / (Safety Markings):	Input, Output / Safety: CE, UL, Emission: FCC / (According to related standards requirements)
Sticker and Ink Material:	UL approved