



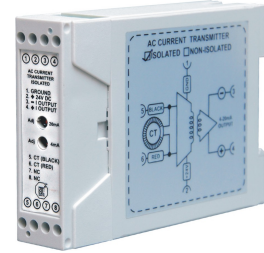
YUTECH

DATASHEETS: LT AND HT AC CURRENT TRANSMITTERS DOC NO: A-ISO-DS-CT-2016-1005

Isolating LT and HT AC Current Transmitters - CT Converters and Associated Products:

This Isolation Products Group contains:

- Isolating CT Converter
- Isolating CT Converter with CT Protector
- Isolating CT Converter with Potential Transformer



Many Machines and Devices like Induction Furnaces, Motors, Compressors etc., work either on Low or High Tension Electric Power Supply and draw load currents in very large quantities.

The commonest and non-intrusive way of measuring Current is by passing one or all of the three Mains Conductors of Phases through Current Transformers (CT). The CT Current Passing through the Conductor generates a Proportional albeit lower easily measureable Current in the CT Coil, typically 0-1A or 0-5A. Isolating CT Converter converts this Current Signal to standard 4-20mA while Electrically Isolating the AC Side from the Control Side. But, keeping the CT Converter inside MCC Panel often may induce Electrical noise in the Transmitted Signal. The CT Converter can be fixed in another Panel / JB but this leaves the CT in danger of open circuit and damage. To prevent this from happening YUTECH has devised two techniques One using a CT Protector and another using a Potential Transformer especially for sensing Load Current of HT Devices, both can be fixed in the HT Panel thus protecting CT.

CT Protector: CT Protector is a Device to prevent open circuit conditions in CT. CT Protector along-with Isolating CT Converter forms a very reliable, stable and accurate source of sensing High Currents.

Potential Transformer: Another device is a Potential Transformer (PT). AC Current from Primary CT is passed through the Primary Winding of PT an EMF is produced in the PT's Secondary Winding due to Mutual Inductance this Voltage is directly proportional to the Voltage Generated in the Primary Winding due to passage of Current.

Datasheet:

Common General Specifications

Enclosure

Shape	: Rectangular
Material	: ABS
Dimensions (mm)	: Length: 107.5, Height: 75mm; Width: Varies as per Model and is specified in product coding information.
Mounting	: Din Rail Mounted.
Ingress Protection	: IP 40, Shock and Contamination Proof.
Flammability	: Class V0 according to UL 94.

Specifications which vary with Series:

		A Series
Ambient Temperature	-20°C to 55°C	Yes
Power Supply		
Power Consumption	: For all Isolation Products is less than	1W
Power Supply Voltage can be chosen as either AC Mains or DC	: 16 to 36 VDC. Recommended 24 VDC. 85 to 265 V AC 50 – 60 Hz	Yes Yes
Power Supply Side Isolation	: 3 Point Isolation. Rail Power Supply of 24 VDC is internally isolated from Input and Output Circuitry. Reverse Voltage Protection.	Yes Yes
Signal Isolation		
Isolation Barrier Voltage	: VDC	3500
Isolation Type	: Isolation Technology used	Mutual Inductance
Input and Output		
Input Signal	: AC Current: 0 – 5 A AC (With CT Protector)	Option Selectable
Input and Output Side Protection	: Reverse Loop Protection. EMI Filtering and Protection RFI Filtering	Yes Yes Yes
Output Signal	: DC Current: 4 to 20 mA DC Voltage: 0 to 10 VDC	Option Selectable Option Selectable
Maximum Load Permissible for Current Output	: Value at 24 VDC Power Supply.	250 Ohm
Maximum Non-linearity	: Value with respect to Full Scale Range at maximum ambient temperature.	± 0.1%
Output Calibration	: Linearity trim set on fascia – Slope Adjust.	Yes

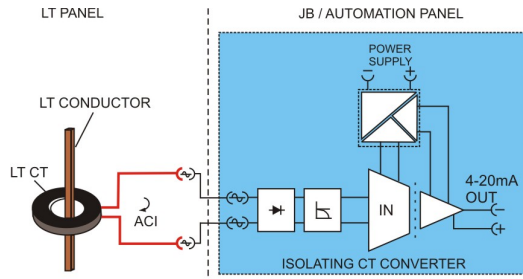
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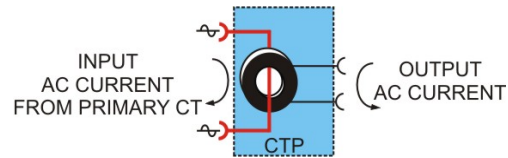
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Product Code: A-ISO-DC-CT-C1-S



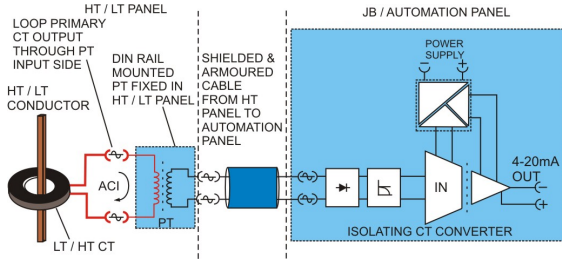
ISOLATING CT CONVERTER For 230vac power supply, Replace DC with AC in product code.

Product Code: A-ISO-DC-CTP



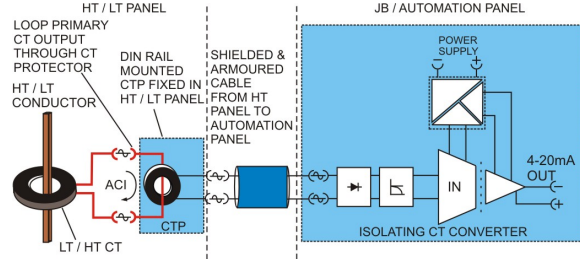
CT PROTECTOR

Product Code: A-ISO-DC-PT-C1-S



ISOLATING CT CONVERTER WITH POTENTIAL TRANSFORMER For 230vac power supply, Replace DC with AC in product code.

Product Code: A-ISO-DC-CTP-C1-S



ISOLATING CT CONVERTER WITH CT PROTECTOR For 230vac power supply, Replace DC with AC in product code.

Ordering Information

Product Code (PC)

A-Series

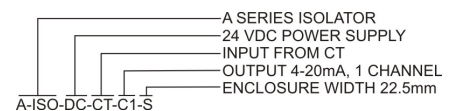
- | Product Code (PC) | Product Description |
|----------------------------|--|
| A-ISO-DC-CT-C1-S | : Isolating CT Converter – LT CT Output AC Current of 0-5A to standard DC Current (4 – 20 mA). This Order Code includes Resistance to be connected across CT. CT may be ordered separately. |
| A-ISO-DC-HTCTP-C1-S | : Isolating CT Converter with HT CT Protector – AC Current (HT/LT) to standard DC Current (4 – 20 mA). This Order Code includes CT Protector. Please mention Load Current and HT/LT CT Output Current during ordering. Factory default is for 5A. |
| A-ISO-DC-HTPT-C1-S | : Isolating CT Converter with Potential Transformer – AC Current to standard DC Current (4 – 20 mA). This Order Code includes PT. Please mention Load Current and HT CT Output Current during ordering. Factory default is for 5A. |
| A-ISO-AC-CT-C1-S | : Isolating CT Converter – LT CT Output AC Current of 0-5A to standard DC Current (4 – 20 mA). This Order Code includes Resistance to be connected across CT. CT may be ordered separately. 230 VAC Power Supply. |
| A-ISO-AC-HTCTP-C1-S | : Isolating CT Converter with CT Protector – AC Current (HT/LT) to standard DC Current (4 – 20 mA). This Order Code includes CT Protector. Please mention Load Current and HT/LT CT Output Current during ordering. Factory default is for 5A. 230 VAC Power Supply. |
| A-ISO-AC-HTPT-C1-S | : Isolating CT Converter with Potential Transformer – AC Current to standard DC Current (4 – 20 mA). This Order Code includes PT. Please mention Load Current and HT CT Output Current during ordering. Factory default is for 5A. 230 VAC Power Supply. |
| A-ISO-CTP-S | : CT Protector. Please mention Load Current and HT CT Output Current during ordering. Factory default is for 1.5A. |
| A-ISO-PT | : Potential Transformer for HT CT Isolation. Please mention Load Current and HT CT Output Current during ordering. Factory default is for 1.5A. |

Note: HT / LT CT, Cable, Panel etc is not part of the supply. We also provide turnkey solutions and enquiry for these items can be sent to us at info@yutech.in.

Product Coding (PC) Information:

Item Description	Item Code	Item Specification
Product Description	A-ISO	A-Series Isolator
Power Supply	DC	Power Supply Voltage 24 VDC.
	AC	Power Supply Voltage 85 to 265 VAC.
Input / Output	C1	Output DC 4 to 20mA, single channel.
	CT	LT CT output of 0-5A, please specify changes during ordering.
	HTCTP	HT CT Protector
	HTPT	HT Potential Transformer
Enclosure	S	Standard 22.5mm Width.

Decoding the Product Code:



High Voltage Sensing with Potential Transformers: High Voltages can be sensed by giving Potential Transformer Output to the Input of AC Voltage Isolator (Voltage Level to be predefined during ordering) this Signal is converted to standard Isolated 4-20mA Output and taken for Control Applications.

LT AC Current Sensing Using Isolating CT Converter: High Load Currents can be Sensed with the help of Load Sensing Current Transformer (CT), 0-5A CT Output directly connected to Isolating CT Converter converts this AC Current Signal to standard Isolated 4-20mA Output and taken for Control Applications.

HT AC Current Sensing Using Isolating CT Converter and CT Protector: This technique is particularly meant for High Tension (HT) side Current Sensing. AC Current Sensing by using a CT Protector with Isolating CT Converter which converts the AC Current Signal to standard Isolated 4-20mA Output, for Control Applications. Please see the Application Diagram. This Technique serves two purposes, first, it protects the Main HTCT from Open Circuit and second, it isolates the Automation System from Hazardous HT Environment. Output of CT Protector is connected to the AC Voltage Isolator.

HT AC Current Sensing Using Isolating CT Converter and Potential Transformer (PT): This second Technique is also meant for High Tension (HT) side Current Sensing. AC Current from Primary CT is passed through the Primary Winding of PT while its Secondary Winding is connected to Isolating CT Converter as shown in the application diagram, this again serves two purposes, first, it protects the Main HTCT from Open Circuit and second, it isolates the Automation System from Hazardous HT Environment. The AC Voltage Isolator converts the AC Current Signal to standard Isolated 4-20mA Output, which can be given for Control Applications.

Note:

1. Please read the datasheets for Product Codes and Product Specifications.
2. Isolation Products with additional loops or specifications can be custom made on request.
3. Please visit us at www.yutech.in
4. Please send your enquiries to sale@yutech.in