

The kit includes 3 CT transformers
as specified below:



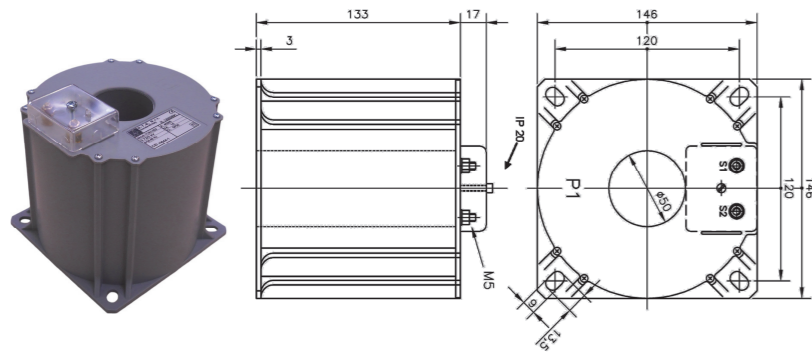
TCR1020 Trasformatori di misura, protezione di fase o omopolare / Measuring, phase or homopolar protection C.T.

Dati tecnici generali / General data

- Corrente termica di breve durata / Rated short-time thermal current (I _{th})	100/1 In/s	Max 40 kA
- Livelli d'isolamento / Insulation levels	0,72/3 kV	r.m.s
- Frequenza nominale / Rated frequency	50 ÷ 60 Hz	
- Corrente primaria / Primary current	50 ÷ 800 A	
- Foro per passaggio cavo/fi / Hole for wire/cable	50 mm	
- Peso (circa) / Weight (about)	10 kg	
- Grado di protezione / Protection degree	IP20	-
- Temperatura di funzionamento / Working temperature	-10 ÷ +70 °C	
- Temperatura di immagazzinamento / Storage temperature	-20 ÷ +80 °C	

- Conforme alle norme CEI EN 60044-1 & CEI EN 61869-2 / According to IEC 60044-1 & IEC 61869-2 standards
- Isolamento in resina / Resin insulated
- Custodia in materiale plastico autoestinguente / Self-extinguishing plastic case
- Fornito con piedini di fissaggio a parete / Supplied with wall mounting pins
- Corrente secondaria 5 A oppure 1 A / 5 A or 1 A Secondary current
- Disponibile con coprimorsetto sigillabile UTF / Available with UTF sealable terminal cover
- A richiesta esecuzione con doppio secondario e/o doppio primario / On request double secondary or double primary execution
- Per uso interno / For indoor use

Dimensioni in mm / Dimensions mm



Corrente Pri. Primary Current [A]	Classe Prestazione Class - Burden	Codice Code	Classe Prestazione Class - Burden	Codice Code	Classe Prestazione Class - Burden	Codice Code	Classe Prestazione Class - Burden	Codice Code
Possibili realizzazioni - Examples of production								
50 A	0,5 - 5 VA Fss 5	TCR1020-50A	0,2 - 1,5 VA Fss 5	TCR1020-50B	SP10 - 4 VA	TCR1020-50C	SP20 - 1,5 VA	TCR1020-50D
100 A	0,5 - 10 VA Fss 5	TCR1020-100A	0,2 - 5 VA Fss 5	TCR1020-100B	SP10 - 10 VA	TCR1020-100C	SP20 - 5 VA	TCR1020-100D
200 A	0,5 - 30 VA Fss 5	TCR1020-200A	0,2 - 10 VA Fss 5	TCR1020-200B	SP10 - 20 VA	TCR1020-200C	SP20 - 10 VA	TCR1020-200D
300 A	0,5 - 30 VA Fss 5	TCR1020-300A	0,2 - 15 VA Fss 5	TCR1020-300B	SP10 - 20 VA	TCR1020-300C	SP20 - 10 VA	TCR1020-300D
400 A	0,5 - 30 VA Fss 5	TCR1020-400A	0,2 - 20 VA Fss 5	TCR1020-400B	SP10 - 20 VA	TCR1020-400C	SP20 - 10 VA	TCR1020-400D
500 A	0,5 - 30 VA Fss 5	TCR1020-500A	0,2 - 20 VA Fss 5	TCR1020-500B	SP10 - 20 VA	TCR1020-500C	SP20 - 10 VA	TCR1020-500D
600 A	0,5 - 30 VA Fss 5	TCR1020-600A	0,2 - 20 VA Fss 5	TCR1020-600B	SP10 - 20 VA	TCR1020-600C	SP20 - 10 VA	TCR1020-600D
800 A	0,5 - 30 VA Fss 5	TCR1020-800A	0,2 - 20 VA Fss 5	TCR1020-800B	SP10 - 20 VA	TCR1020-800C	SP20 - 10 VA	TCR1020-800D

Function and Purpose of the Device

The device is designed to:

- Avoid replacing existing single-secondary voltage transformers (VT);
- Ensure compatibility with any plant control system (CCI);
- Upgrade installations to comply with the regulatory obligations introduced by ARERA Resolutions No. 540/2021 and 385/2025, which require new interconnection and network management modes.

Innovative Advantages

- Universal compatibility: works with any plant controller (CCI);
- Non-invasive integration: no replacement of existing transformers required;
- Cost reduction: avoids structural modifications to installed systems;
- Easy installation and maintenance;
- Immediate compliance with ARERA norms—ideal for grid operators, industrial installations, and local distribution systems;
- The cost of this kit allows savings of up to 80% compared to the purchase of new CTs and VTs (considering replacement, certifications for modified panels, DSO downtime, commissioning time, etc.);
- Procurement and installation times drastically reduced—just a couple of hours for installation, with no transformer delivery lead times.

Typical Applications

- Industrial plants with integrated monitoring and control systems;
- Secondary distribution and transformation networks (MV/LV substations);
- Existing or new renewable energy plants to be updated in accordance with current regulations;
- Any installation subject to ARERA resolutions that require a CCI.

Regulatory Framework

ARERA Resolutions No. 540/2021 and 385/2025 impose technical and interoperability requirements for control and interface systems in electrical installations.

This device fulfills such requirements without modifying existing hardware, extending the service life of installed transformers while maintaining normative and technical continuity.

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**PROBLEMS WITH
REPLACING
TRANSFORMERS
EXISTING
SINGLE-SECONDARY VTs**



**HERE'S
WHERE THIS KIT
COMES IN!**



PATENT APPLICATION
FILED

**AVOID REPLACING
EXISTING TRANSFORMERS**

**ENSURE COMPATIBILITY
WITH ANY PLANT CCI**

**ADAPTATION OF
PLANTS TO REGULATORY
REQUIREMENTS**

EASY INSTALLATION

COST REDUCTION

TECHNICAL DATA SHEET

Passive Interface KIT for Galvanically Isolated Duplication of Voltage Transformer (VT) Outputs

General Description

The Passive Interface KIT enables galvanically isolated duplication of the secondary outputs of voltage transformers (VT) installed in MV/LV electrical substations.

It is designed to simultaneously power:

- a network analyzer (Meter), and
 - for the measurement of zero-sequence voltage (earth fault detection);
- without interference and in full compliance with CEI 0-16 and ARERA Resolutions 540/2023 and 385/2025..

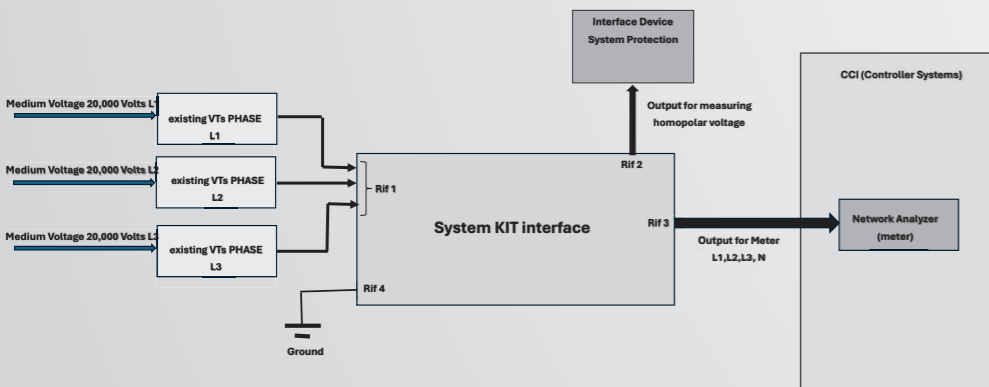
Applications

- Renewable energy generation plants (PV, wind, biomass, hydro).
- MV/LV substations with single-secondary voltage transformers.
- Electrical measurement and protection systems requiring simultaneous CCI and Meter connections and Protection Relay
- Regulatory compliance upgrades for existing plants not aligned with current ARERA directives.

Main Function

The KIT allows:

- Passive, galvanically isolated duplication of voltage transformer outputs.
- Simultaneous connection of the CCI and network analyzer without measurement alteration.
- Avoidance of existing VT replacement, preserving switchboard certification.
- Full compliance with CEI 0-16 and compatibility with any Meter and CCI on the market.



Technical Specifications

ITEM	DESCRIPTION
System type	Passive interface for galvanically isolated duplication
Application	MV/LV substations - metering and protection systems
Galvanic isolation	Full insulation between derived outputs
Ventilation	Integrated forced-ventilation cooling system
Internal protections	Replaceable fuses on each voltage line
Input/output connections	Screw terminals or plug connectors for VT input and duplicated outputs
Internal CT configuration	3 transformers configurable per plant parameters
Customization	Voltage and current values configurable via customer Excel file
Mounting	On panel or electrical board (MV/LV substation)
Power supply	Directly derived from VT secondary winding
Maintenance	No scheduled maintenance required
Compliance	CEI 0-16, CEI EN 61869-3, ARERA 540/23 – 385/2

KEY ADVANTAGES

- No replacement of existing VTs needed
- Preservation of MV switchboard certifications
- No plant shutdown or grid manager intervention required (Request for Out-of-Service).
- Total galvanic isolation between protection and analyzer
- Universal compatibility with any CCI or Meter
- Reduced compliance costs and installation time
- Integrated protection and flexible parameter configuration
- Full CEI 0-16 / ARERA conformity ensured

Regulatory Compliance and Context

- CEI 0-16: defines requirements for measurement and protection in MV systems.
- ARERA Resolutions 540/2023 and 385/2025: mandate installation of Plant Controllers (CCI) with integrated network analyzers.
- The KIT ensures compliance without VT replacement, eliminating issues caused by open-delta connections incompatible with the star connection required by CCI systems.

Typical Configuration

- Input: derived from the three-phase secondary of VTs
- Isolated outputs:
- Line 1 → Interface protection (open delta)
- Line 2 → Network analyzer (star connection)
- Galvanic isolation ≥ 3.5 kV
- Internal configuration: compact CT/VT modules with protective fuses on each line

Operational Benefits

- Plug & play solution—easily integrated into existing systems
- Fully compatible with all MV/LV substation architectures
- Instant compliance with ARERA obligations without production downtime
- Functionally equivalent to dual-secondary VTs, at far lower cost and complexity, cost reductions estimated between 70% and 80%

Supply and Customization

- The KIT is supplied pre-wired and factory-tested, ready for installation
- Electrical parameters are customized based on client data via a dedicated Excel file
- Labeling, terminals, and wiring diagram included in supply

SUMMARY

FEATURE	BENEFIT
Passive interface	No signal alteration
Galvanic isolation	Safety and reliability
Universal compatibility	Works with all Meters and CCIs
Regulatory conformity	CEI 0-16 – ARERA 540/385
Quick installation	No VT replacement required
Cost reduction	Avoids structural work and system downtime

- ✓ An innovative, compliant solution that simplifies regulatory adaptation of power generation systems, ensuring operational continuity, electrical safety, and measurement accuracy.

TECHNICAL SPECIFICATIONS:

Applicable voltage 20,000–35,000 V (to be specified in the order).