OPERATING INSTRUCTIONS
DACT DIFFERENTIAL CURRENT TRANSFORMERS, TYPE A

Thank you for your decision to use our
DACT series differential current transformers.

MBS AG D-74429 Sulzbach-Laufen, Eisbachstraße 51; Phone: +49 7946 9581 0 / Fax: +497976 9851 90

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General product description

DACT series differential current transformers are especially sensitive current transformers for logging the smallest AC currents. In combination with suitable RCM measuring devices, they allow the logging of the smallest sinusoidal residual currents which escape to earth or through other paths in the event of a fault. In such cases, the measuring device connected to the differential current transformer analyses the residual current logged by the differential current transformer, and from this generates corresponding status signals (warning, triggering, or fault messages).

Safety information

The differential current transformers are intended exclusively for logging small AC currents within the nominal current range specified on the rating plate.
Transformers may be installed or replaced only when the equipment is in a voltage-free state.
Contact with live components is life-threatening. The corresponding upstream circuit-breakers must be removed and kept safely in such a way that other persons cannot replace them without this being noticed.
Only the intended connection and attachment elements may be used.
The transformers' secondary circuit is protected by a suppressor diode, integrated into the device, against overvoltages arising in "open operation".
Local customary safety and works regulations must be complied with. The transformers must be installed only by proficient and appropriately trained people.

Liability

The selection of the transformer deployed and of the RCM measuring devices deployed is the sole responsibility of the user. No liability or warranty is accepted for this. The information in the catalogues and datasheets does not represent any assurance of specific properties; rather, they result from empirical values and measurements. Liability for damages which result from operation/project development or malfunctions of the measurement circuitry, is excluded. The operator/project developer must ensure that incorrect operation, incorrect project development, and malfunctions cannot cause further damage.
No warranty is accepted for defects and damage resulting from incorrect deployment of the differential current transformer or from failure to comply with these operating instructions.

Technical data

Insulation coordinates as per DIN EN 60664-1 (version 01/2008)

Rated voltage:	800V
Rated surge voltage:	8 kV/50µs
Degree of contamination:	III

DACT measurement transformers

Rated primary differential current (Ipr):	25A
Rated secondary differential current:	0.0417A
Rated measuring ratio:	600:1
Rated burden:	100Ω
Rated load:	0.174VA
Frequency range:	42…3kHz
Rated continuous thermal differential current (I_{CTH}):	40A
Rated thermal short-term current (I_{TH}):	60 x I_{PR} = 1.5kA/1s

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Ambient conditions

Working temperature range:	-10 … +70°C
Storage temperature range:	-40 … +70°C
Climate classes as per IEC 60721	
Stationary use (IEC60721-3-3):	3KS (excluding dew and ice formation)
Transport (IEC 60721-3-2):	2KS (excluding dew and ice formation)
Long-term storage (IEC 60721-3-1):	1KS (excluding dew and ice formation)
Mechanical stress as per IEC 60721	
Stationary use (IEC 60721-3-3):	3M4
Transport (IEC 60721-3-2):	2M2
Long-term storage (IEC 60721-3-1):	1M3

Electrical connections

Connection type:	Spring-cage terminal
Connection cross-sections	
Single-wire:	0.08 …2.5 mm^2 / 28 …12 AWG
Fine strand (braid):	0.08 …2.5 mm^2 / 28 …12 AWG
Fine-strand conductor with end splice and insulation sleeve:	0.25 …1.5 mm^2
Fine-strand conductor with end splice but without insulation sleeve:	0.25 …1.5 mm^2
Stripping length:	5 …6 mm

Electrical connection cables (cable lengths)

Single conductor ≥ 0.75mm^2:	0 … 1 m
Single conductor, twisted ≥ 0.75mm^2:	0 …10 m
Shielded cables ≥ 0.5mm^2:	0 …30 m

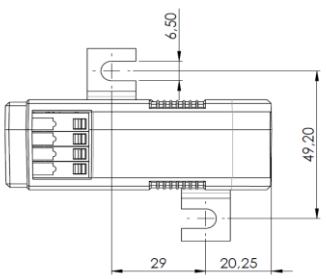
Miscellaneous

Protection rating for measuring system (DIN EN 60529):	IP40
Protection rating for terminals (DIN EN 60529):	IP20
Mounting type:	Screw fastening with attachment bracket (standard) Support rail mounting (optional accessory)
Flammability rating of casing:	UL94 V-0

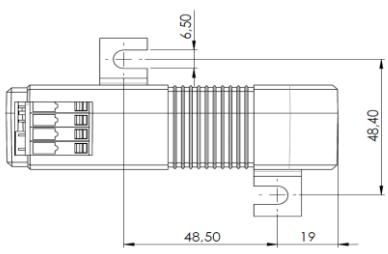
Wiring diagrams

Transformer mounting DACT 20/DACT 35

DACT 20

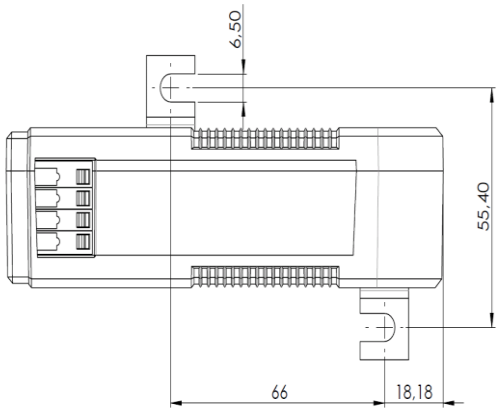


DACT 35

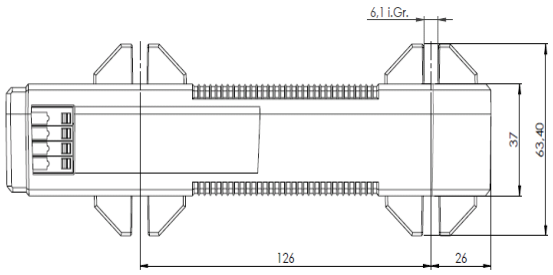


Transformer mounting DACT 60/DACT 120

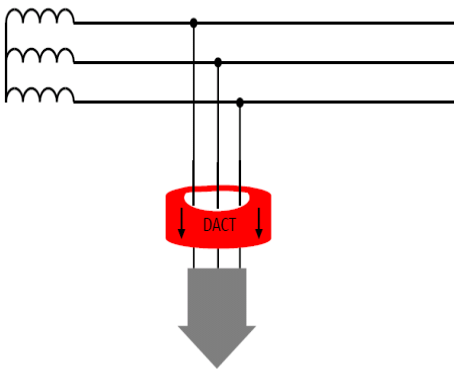
DACT 60

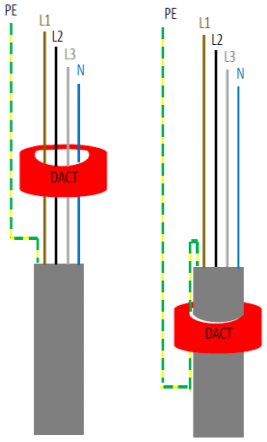


DACT 120



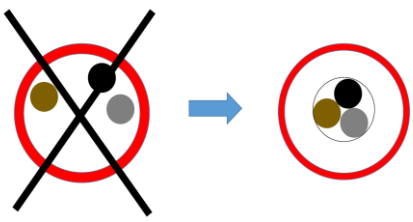
Installation instructions





When installing the transformers, the individual cables must be led through as shown.

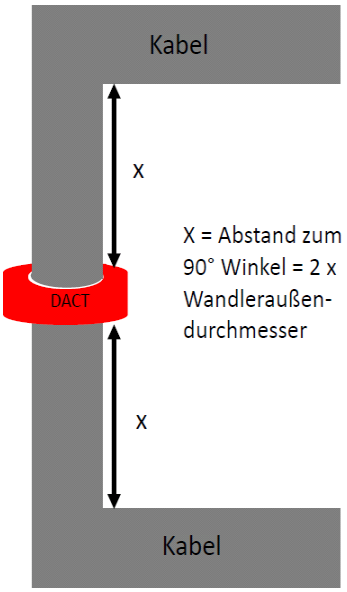
In general, protective earths present must not be led through the differential current transformer. In general, it should be ensured that all cables (phase and neutral conductors) are led through the transformer.



In order to ensure maximum measurement precision, all cables to be measured must be arranged as centrally as possible in the transformer's primary conductor window.

Installation instructions (continued)

In order to prevent a magnetic effect on the differential current transformer, a bend in the cables being measured may occur only at a specific distance from the transformer.



Legende zur Grafik
cable
X = Distance to 90° angle = 2 x external diameter of transformer

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