

Current Transformers

A current transformer is an instrument that transforms one current value to another current value (e.g. 100A to 5A.) The advantage of using a current transformer in an industrial context is that it provides galvanic isolation from the voltage on the primary winding while simultaneously furnishing a power signal that has been converted to a standard level (1A or 5A), which in turn permits the use of standard measurement instruments and relays.

Standard models

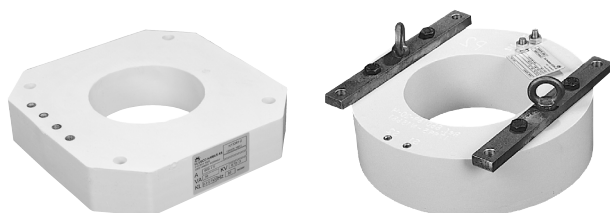
Noratel offers a comprehensive range of current transformers which were previously marketed under the name "Garre". Standard models are available as encapsulated versions (UL 94-V0) in a myriad of different flavors all manufactured and tested according to IEN60044-1 (VDE 0414/1). A complete list of Noratels standard range of power supplies are available in a separate electronic catalog (pdf) and at the www.noratel.com

Custom designed current transformers

In addition to our comprehensive standard product line of current transformers, customised designs and solutions are available to customer specifications and designed and manufactured in accordance with specified standards (IEC, ANSI, BS). Current transformers can be supplied for primary currents of from 10 Amps to 10000 Amps and in accuracy classes from 0.1% and higher for specified burdens and overcurrent values.



Micafil bushings with paper insulated ushing current transformers mounted in aluminium housings



Epoxy moulded transformers with connection points and alternative means of fixing and fastening



When current transformers are being ordered, the supplier needs to know:

- **Desired ratio** - primary current and secondary current (For example 500A/5A)
- **Centre hole in the transformer/Dimension of the primary conductor** - will a rail or cable be used? (Example: Rail 10x50mm or ID>50mm)
- **Desired burden (power) (VA) and accuracy class** (Example: 20 VA cl. 0.5 (see IEC 60044-1))
- **Overcurrent factor** must be specified for relay transformers and may be specified for instrument transformers
- **Distance between primary conductors** in 3-phase system
- If special **fastening arrangements** are desired (Fastening holes for screws, DIN rail fasteners, etc.)
- Specify whether it is an **instrument or relay transformer** (this is often evident from the given class specification)

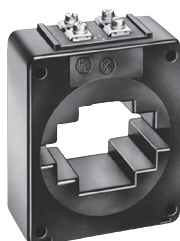
A minimum specification for a relay transformer with a ratio of 1000A to 5A, burden 30VA, accuracy class 5%, overcurrent factor 20 (20 times the rated current) and central hole of min. 50mm would look like the following:

1000/5A 30VA kl.5 P20 ID>50mm

A corresponding specification for an instrument transformer in a Window type transformer application, with a ratio of 400A to 5A, burden 10VA, accuracy class 0.5%, overcurrent factor 5 (5 times the rated current) and centre hole with min. dia. 30mm, would look like the following:

400/5A 10VA kl.0,5 Fs5 ID>30mm

Current transformers

**Noratel current transformers**

Current transformers can be delivered with fastening brackets and sealable secondary housings. Moulded and encapsulated styles, manufactured and tested in accordance with IEC 60044-1, which also encompasses the VDE 0414 norm. Alternatively in accordance with IEEE Std C57.13-1993 (ANSI)

General specifications

- Max. operating voltage: 720 V
- Test voltage (1 min): 3 kV
- Frequency: 50/60 Hz
- Continuous overcurrent: $1,2 \times I_N$
- Thermal overcurrent (1 sec): $I_{th} = 60 \times I_N$
- Dynamic overcurrent: $I_{dyn} = 2,5 \times I_{th}$
- Insulation class (t_p): E (120°C)

Standard models

Type	Ratio	Burden	Hole	Dim. (BxDxH)	Art. no.
GK	250/5 A	0,1 - 2 VA	40x10 mm 30x15 mm mm Ø 29 mm.	74x52x81 mm	4-083-000372
GK	300/5 A	0,1 - 2 VA		74x52x81 mm	4-083-000172
GK	400/5 A	0,1 - 3 VA		74x52x81 mm	4-083-000173
GK	500/5 A	0,1 - 5 VA		74x52x81 mm	4-083-000375
GK	600/5 A	0,1 - 5 VA		74x52x81 mm	4-083-000167
L60X	500/5 A	0,1 - 3 VA	60x10 mm	89x50x108 mm	4-083-000204
L60X	1000/5 A	0,1 - 7,5 VA	50x20 mm	89x50x108 mm	4-083-000206
L60X	1500/5 A	0,1 - 10 VA	40x30 mm	89x50x108 mm	4-083-001098
K100K	1000/5 A	0,1 - 5 VA	100x10 mm 80x60 mm	139x54x150 mm	4-083-000582
K100K	1500/5 A	0,1 - 5 VA		139x54x150 mm	3-083-000755
K100K	2000/5 A	0,1 - 5 VA		139x54x150 mm	3-083-000756
K100K	2500/5 A	0,1 - 5 VA		139x54x150 mm	3-083-000757
K100K	3000/5 A	0,1 - 5 VA		139x54x150 mm	3-083-000758
LGK	3000/5 A	0,1 - 5 VA	120x35 mm	170x54x140 mm	3-083-000737
LGK	4000/5 A	0,1 - 5 VA	120x35 mm	170x54x140 mm	3-083-000738

Meter switcher - IP00

**Type N-MOK**

In systems incorporating current transformers, it is necessary for the secondary side to be easily short-circuited when the meter is taken down for auditing or replacement. Meter switchers allow the technician to perform the requisite measurements in a fast, simple and safe manner without disturbing the rest of the circuitry.

Standard models

Type	Description	Art. no.
N-MOK230	230 Volt, 3-phase meter switcher with 2 current systems	3-083-000238
N-MOK400	400 Volt 3-phase meter switcher with 3 current systems	3-083-000237