MEDIUM VOLTAGE PRODUCT

Current Transformers KOLMA

Instruction for Installation, use and maintenance

Scope of Contents

Instructions for installation, use and maintenance for current transformers

These installation, use and maintenance instructions apply for current transformers of the following types: KOLMA

1. Service conditions

Current transformer series KOLMA is suitable for indoor use. The primary conductor is a cable entered through the opening. At operating voltage over 0.72 kV the primary conductor must have an insulation corresponding to the voltage. The iron core and windings of a current transformer are cast in epoxy resin which has good insulating properties. In addition the epoxy resin has a good impact strength and toughness which protect.

2. Technical details

Rated voltage *, Um	**0.72 kV**
Frequency	50; 60 Hz
Short time withstand current Ith, 1s	60 x Ipn
Peak withstand current Idyn	2.5 x Ith
Insulation test voltage, 50Hz/1min	3 kV
Operating temperature range	-5°C...+55°C
Storage temperature	-40°C...+55°C
Secondary terminals	for 6 mm² wires

* The insulation level of the primary conductor determines the maximum operating voltage.

The cable current transformers can feed the rated burdens given in the following tables 1 and 2 in the accuracy class 10P10 (IEC 60044-1). Markings for secondary terminals used in the tables are presented in point 4 - Secondary circuit connection. For types KOLMA 06A1 and KOLMA 06D1 the rated current ratio is 750/5A.

Type	**Ratio Ipn/Isn [A]**	**Secondary terminals**	**Burden [VA]**
KOLMA 06 A2	100/1	S1-S2	2.0
KOLMA 06 B2	100/1	S1-S2	2.5
KOLMA 06 D2	100/1	S1-S2	2.0

Tab. 1. Ratios and the rated burden for accuracy class 10P10 (KOLMA 06A2, B2 and D2)

Ratio Ipn/Isn [A]	**Secondary terminals**	**Burden [VA]**	
		KOLMA 06 A1	**KOLMA 06 D1**
50/1	S4-S5	1.0	0.5
70/1	S3-S4	2.0	1.0
100/1	S1-S4	2.5	2.0
150/1	S1-S5	5.0	4.0
50/5	S1-S2	1.0	0.5
100/5	S2-S3	2.5	1.5
150/5	S1-S3	4.0	3.0
250/5	S4-S5	7.5	5.0
350/5	S3-S4	10	7.5
500/5	S1-S4	15	10
600/5	S3-S5	20	15
750/5	S1-S5	20	15

Tab. 2. Ratios and the rated burden for accuracy class 10P10. Val mentioned here are approximate (KOLMA 06A1 and D1)

The dimensions of the cable current transformer and its accessories are given in the dimension drawings.

Accessories:
- Base plate: KOLMA-ZX 1 (for KOLA 06 B2) or KOLMA-ZX 2 (for KOLA 06 D2)
- Secondary terminal cover

These are standard accessories, delivered with current transformer without any additional cost.

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01 Fastening of the primary cable.

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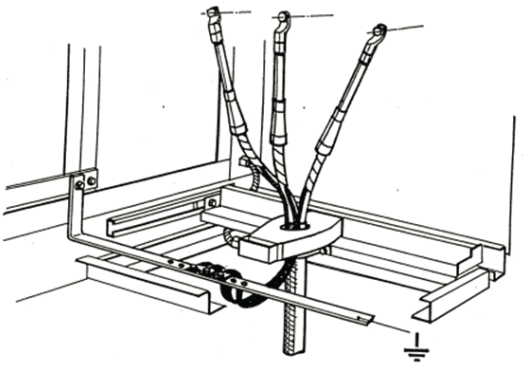
02 Opening of the iron core of the cable current transformer KOLA J2

3. Instructions for installation

Mounting of the cable current transformers
The cable curent transformer may be installed either in vertical or in horizontal position. It can be mounted either by using the two bottom insterts or by using a fixing base plate, which in turn is fixed to the bottom inserts. In case of using bottom inserts for mounting, the screws (M8) shall not be tightened in excess of the nominal torque 9 Nm, otherwise damage may occur. Use a torque spanner if necessary. When necessary the cable current transformer can be fixed to the cable which acts as primary conductor by means of a special fixing piece. In such case it must be insured that the cable endures the strain caused by the weight of the transformer especially in circumstances where vibration is involved.

Installation of primary cable
The cable acting as primary winding shall be entered through the opening in the cable current transformer. Due to its openable construction the cable current transformer can be installed even after the cable acting as primary conductor and its cable terminator are already connected. If the metal armour of the cable or the protective conductor is drawn through the transformer, the effect of the current in them to the sum of the phase currents must be eliminated when installing the transformer. In such cases an earthing conductor from the cable terminator, metal armour or protective conductor must be drawn back through the transformer to the earthing point of the substation. The earthing conductor must not be between the cable terminator box and connected to conductive structures. The metalic cable terminator box must be insulated from the supporting structures. Installation of the primary cable has been further illustrated on Fig. 1.



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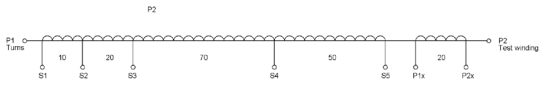
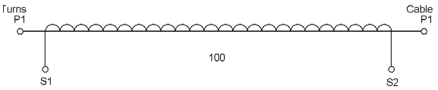
Secondary circuit connection



Secondary terminals are made for 6 mm2 wires. Conductors connected to the secondary terminal block are to be tightened with screw (M4) in terminal block.

Number of the turns and terminal markings for types KOLMA 06A1 and D1:



Secondary terminals are made for 6 mm2 wires. Secondary terminal screws (M5) are not be tightened with a tightening torque exceeding the nominal strength of the screws. Use a torque spanner, if necessary. The nominal tightening torque is 2.5 Nm.

4. Instructions for use

Cable current transformer are used together with static earth-fault relays or they can be generally used when measuring the neutral current e.g. to prewarn of, or locate an earth-fault. Cable current transformers can be used as single-phase current transformers i.e. to measure the phase current e.g. in connection with additional protection. The use of cable current transformers for other purposes than those described above is forbidden. On request excitation curves for relay protection setting can be delivered. The functioning of the eart-fault protection circuit formed by the cable current transformer and the relay is easy to test by means of the test winding available for types KOLMA 06A1 and D1. If the relays starts at the test winding current Ix, it starts at the sum current 20 x Ix in the cable going through the primary opening. The test winding is rated for current max. 6 A. If there is no burden connected to the secondary terminals of the cable current transformer, the secondary terminals must not be left open circuited when primary conductor is connected. If in types KOLMA 06A1 and D1 the burden is connected between two terminals the rest of

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03 Example of connection.

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04 Fastening of the primary cable.

the terminals must be left open circuited (applies also to the test winding terminals). The surface material of the cable current transformers withstand well also effects of chemicals. However, the secondary terminals, cover and base plate must be protected against such effects.

5. Instructions for maintenance

Cable current transformers do not need to be maintained. In addition, excessive dust and other kind of dirt can be brushed off the transformer. Dirty transformers can be cleaned with spirit, petrol or toluene. Traces of arcs and minor surface damages can be easily removed with sandpaper after which the surface is to be treated by applying a thin layer of silicone paste on it. Instructions for repairing greater surface damages (such as cracks) must be requested from the manufacturer.

6. Transport and storage

The permissible transport and storage temperature for cable current transformers is -40ºC … +55ºC. During transport and storage the transformers must not become wet with water. In addition the cable current transformer must be protected against direct sunshine.

7. Dimensional Drawings

Note: Unless explicitly stated, all dimensions and tolerances are valid with generally defined tolerance 0,6 %. Tolerance applies to the all geometric characteristics including form variation of the products. All dimensional references representing a diamenter or radius of a circles are defined as the minimal value of a real dimension.

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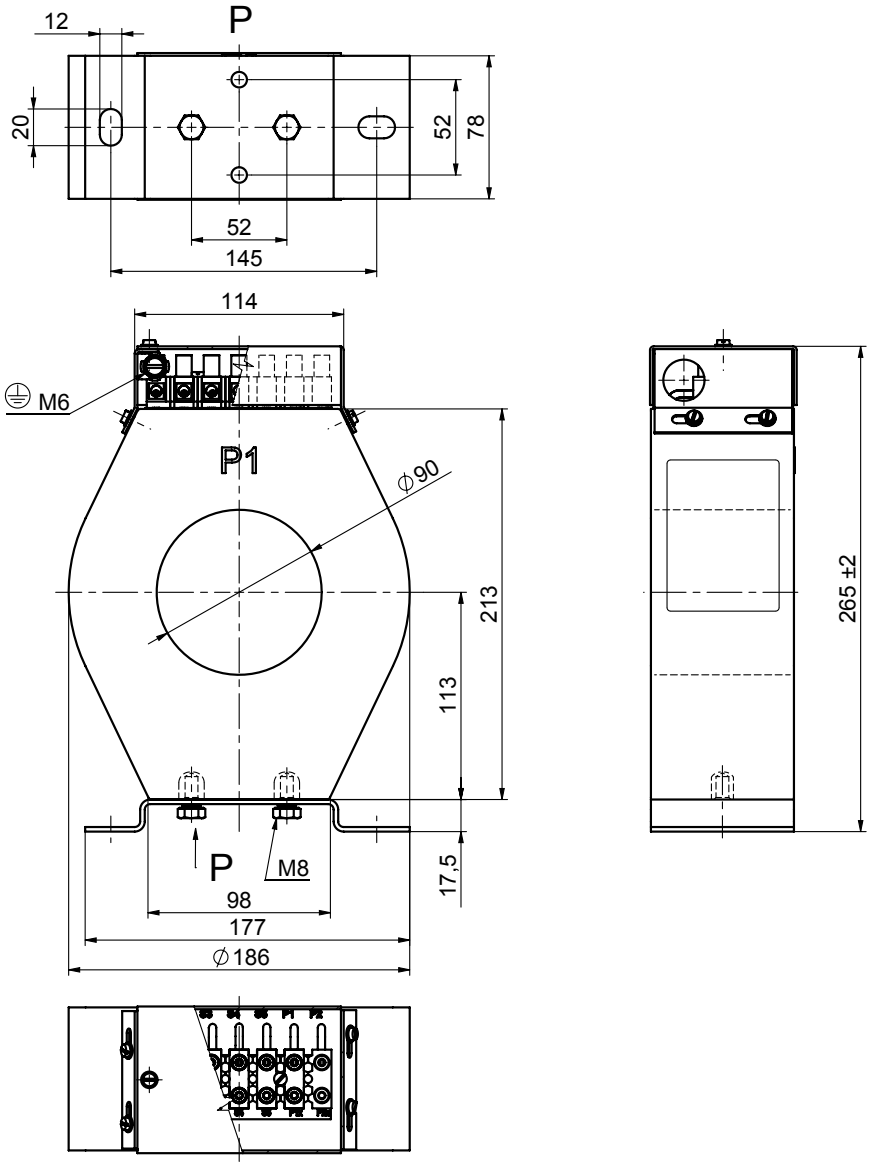
KOLMA 06 A1

Weight: appr. 7,5 kg



Drawing n.
1VL4900386R0101

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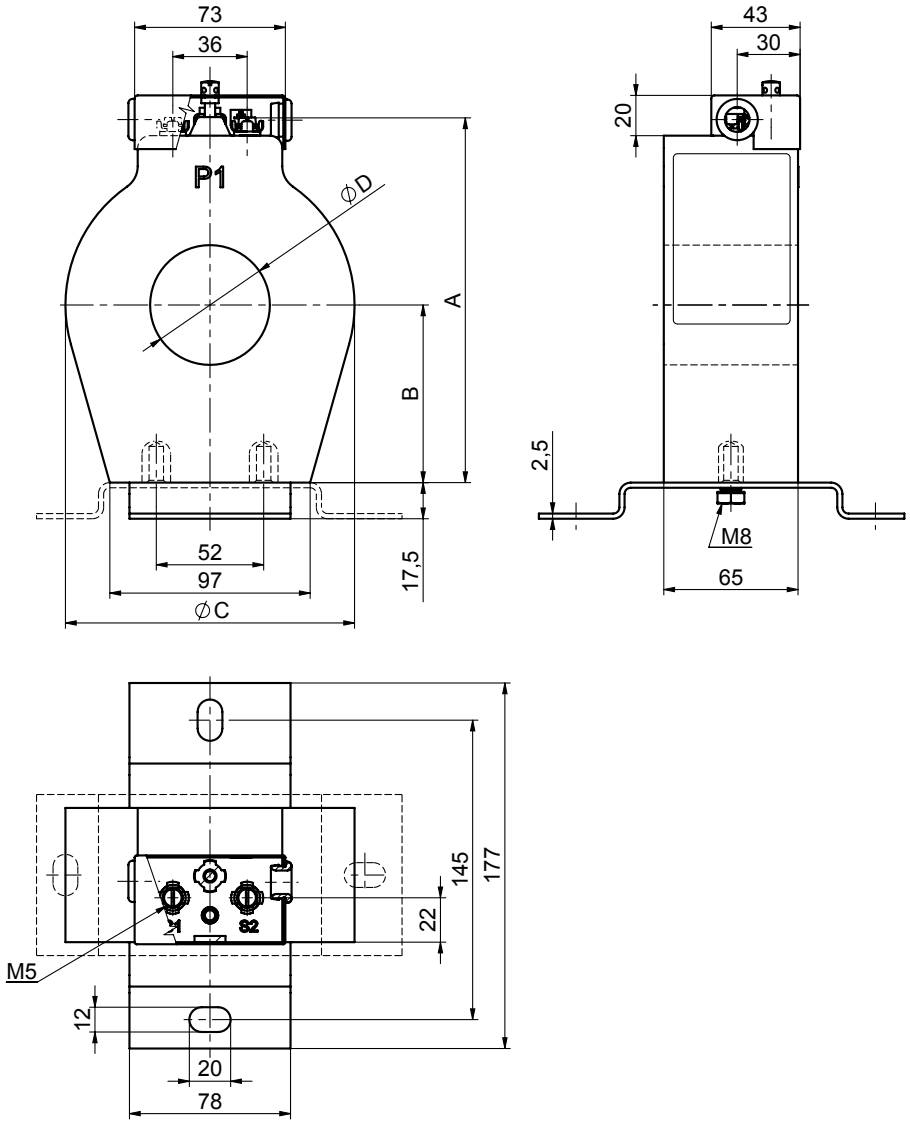
KOLMA 06 A2
KOLMA 06 B2

Weight: see the table



Drawing n.	Type	A [mm]	B [mm]	C [mm]	D [mm]	Weight
1VL4900387R0101	KOLMA 06 A2	177	86	140	58	4,7
1VL4900387R0102	KOLMA 06 B2	229	112	195	100	8,5

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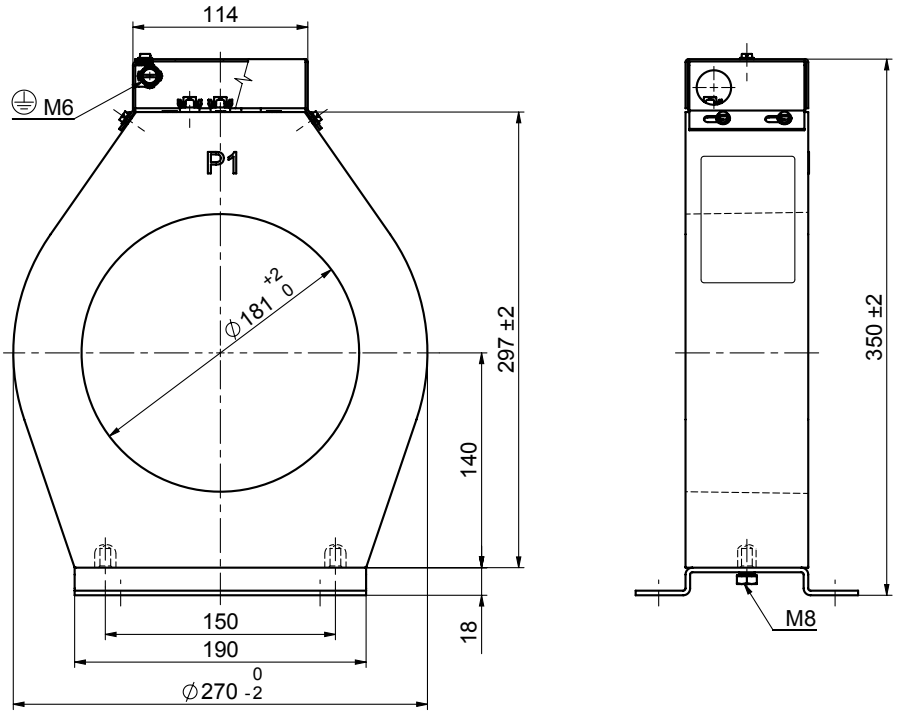
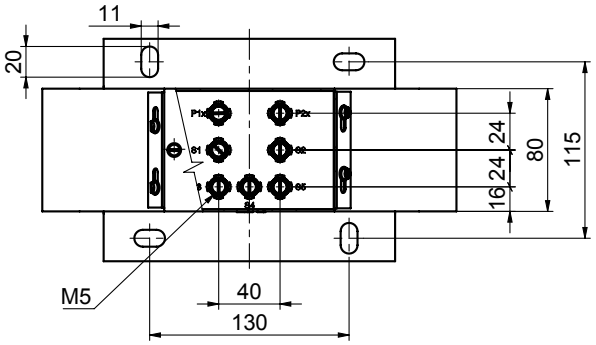
KOLMA 06 D1
KOLMA 06 D2

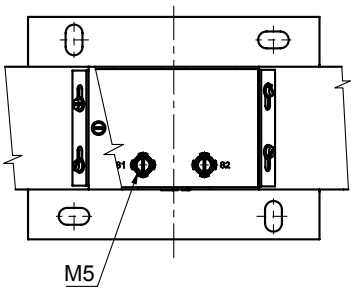
Weight: appr. 13 kg



KOLMA 06 D1



KOLMA 06 D2



Drawing n.	Type
1VL4600888R0101	KOLMA 06 D1
1VL4600888R0102	KOLMA 06 D2

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