# CURRENT TRANSFORMER 014

1.1. Measurement unit of alternating current (current sensor)

| № | Characteristics | Value |
|---|---|---|
| 1 | Maximum current, A | 10 |
| 2 | Signal frequency, Hz | 50 |

1.2. Usage – one-phase and three-phase electricity meters.
Unit – module terminal block, current sensor.

## 2.Technical characteristics

Table 1. Obligatory characteristics

| № | Required characteristics | | Suggested characteristics |
|---|---|---|---|
| | Name | Value | |
| 1 | Nominal current, A | 1 | |
| 2 | Maximum primary current, A with load resistance 25 Ohm | 10 | |
| 3 | Maximum primary current, A with load resistance 250 Ohm | 0,4 | |
| 4 | Minimal regulated current, A | 0,0004 | |
| 5 | Number of coil winds | 2500 | |
| 6 | Accuracy class | 0,1 | |
| 7 | Nominal working frequency, Hz | 50 | |
| 8 | Overall dimensions (see drawings) mm<br>External diameter<br>Internal diameter (hole for primary coil)<br>Height | Appendix 1<br>23 mm,<br>4 mm,<br>11 mm | |
| 9 | Leads<br><br><br>Length of leads, mm<br>Start lead<br>Finish lead | Differently colored interwoven wire (trail is acceptable),<br>130<br>Light tone<br>Dark tone | |
| 10 | Winding path (See Drawings) | Appendix 1 | |
| 11 | Insulation | 4 kv<br>Sinusoidal current /1 minute | |
| 12 | Primary coil inductance Lmin, H<br>(with coil voltage $U_L$= 0.005 V of operating sinusoidal current rate with frequency 50Hz) | 120 | |
| 13 | Maximum coil inductance Lmax, H<br>(with coil voltage $U_L$= 0.6 V of operating sinusoidal current rate with frequency 50 Hz) | Not more the limit $L_H$ /( $L_H$ -0,004 $L_H$ ) | $L_{max} \le \frac{L_{min}}{1-0{,}004 \cdot L_{min}}$ |
| 14 | Coil inductance with direct current biasing, H<br>( with coil voltage $U_L$= 0.03 V of operating sinusoidal current rate with frequency 50 Hz),<br>Average value of biasing current $I_{DC}$=0,20 A/wind | Not less 60 H | |
| 15 | Coil resistance, R copper, Ohm<br>(with temperature 20°C), | Not more 125 | |
| 16 | Operating temperature, ˚C | - 40 °C; + 85 °C | |
| 17 | Relative humidity, % | 75, 95, 85 | |

| | | | |
|---|---|---|---|
| | Annual average less, 30-days and nights, Distributed naturally during the year, Occasionally (incidentally) occurred within other days | | |
| 18 | Leads surfacing for soldering | SnPb | |

Table 2. Characteristics «Not worse»

| № | Required characteristics | | Suggested characteristics |
|---|---|---|---|
| | Name | Value | |
| 1 | Maximum primary current, A | Not less 10 | |
| 2 | Minimal regulated current, A | Not more 0.0004 | |
| 3 | Accuracy class | Not less 0.1 | |
| 4 | Insulation | Not less 4kV / 1minute | |
| 5 | Primary coil inductance Lmin, (with $U_L$= 0.005 V /50Hz) | Not less 120 H | |
| 6 | Maximum coil inductance Lmax, H (with $U_L$= 0.6 V /50 Hz) | Not more $L_H$ /( $L_H$ -0,004 $L_H$ ) | |
| 7 | Coil inductance with direct current biasing $I_{DC}$=0,20 A/wind, H ( with $U_L$= 0.03 V / 50 Hz) | Not less 60H | |
| 8 | Coil resistance, R copper, Ohm (with temperature 20°C) | Not more 125 | |
| 9 | Lowest limit of operating temperatures, ˚C | Not more -40 | |
| 10 | Highest limit of operating temperatures, ˚C | Not less 85 | |

Table 3. Characteristics «The better is the better»

| № | Required characteristics | | | Suggested characteristics |
|---|---|---|---|---|
| | Name | Value | | |
| 1 | Maximum primary current, A | 10 | the more is the better | |
| 2 | Minimal regulated current, A | 0.0004 | The less is the better | |
| 3 | Accuracy class | 0.1 | the more is the better | |
| 4 | Insulation | 4kV / 1minute | the more is the better | |
| 5 | Primary coil inductance Lmin, (with $U_L$= 0.005 V /50Hz) | 100 H | the more is the better | |
| 6 | Coil inductance with direct current biasing $I_{DC}$=0,20 A/wind, H ( with $U_L$= 0.03 V / 50 Hz) | 60H | the more is the better | |
| 7 | Coil resistance, R copper, Ohm (with temperature 20°C) | 125 | The less is the better | |
| 8 | Lowest limit of operating temperatures, ˚C | -40 | The less is the better | |
| 9 | Highest limit of operating temperatures, ˚C | 85 | the more is the better | |

## 3. Quality and Reliability:

Defect level in supply condition (if exceeded the whole consignment is to be returned) - - 0,001%;

Warranty period – 6 years.

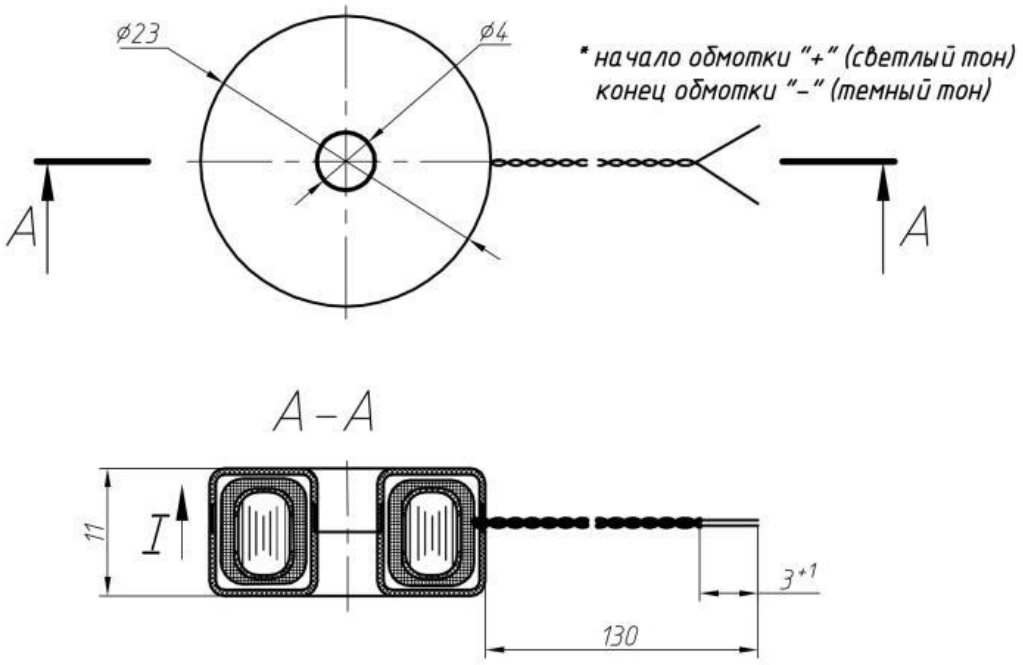
Failure rate during the warranty period - 0,001%;

Life time of component item– 30 years;

Storage period - before installation into equipment 2 years;

Reliability of supplied component items and materials (failure rate) – not less $0{,}002 \cdot 10\text{-}6$ 1/hour

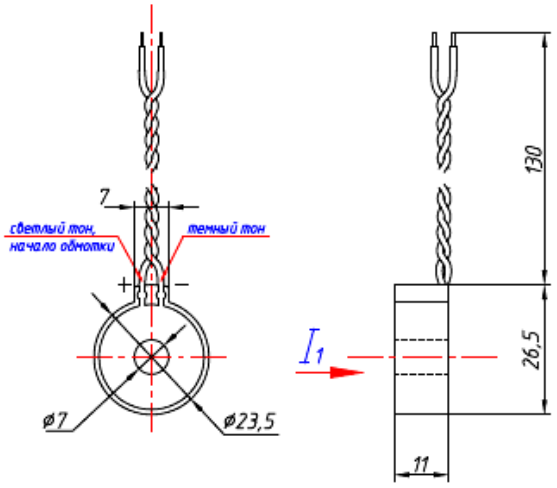
## Dimensions:

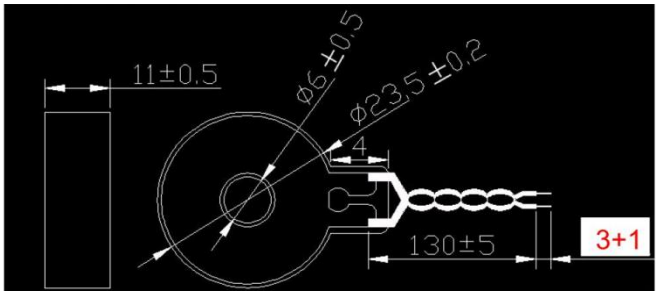



1. Dimensions for reference.
2. Number of winds 2500, coil resistance 120 Ohm.
3. Coil inductance Lmin is not to be less than 120H, with voltage U=0.005V of operating sinusoidal current rate with frequency 50 Hz.
4. Coil inductance is not to be more, Lmin/(1-0.004Lmin), H with voltage U= 0.600V of operating sinusoidal current rate with frequency 50 Hz.
5. Coil inductance with direct biasing current I= 0.200A/ wind in not to be less than 60 H with voltage $U_L$= 0.03 V of operating sinusoidal current rate with frequency 50 Hz.
6. After clearing tinplating of wires to be made by soldering ПОС 61ГОСТ 21931-76
7. Leads of impendence coil are to be interweaved with pitch 6mm

- start "+" (light tone)
  finish "-" (dark tone)

Possible version


7
светлый тон,
начало обмотки
темный тон
+
–
ø7
ø23,5
I1
130
26,5
11


11±0,5
ø6±0,5
ø23,5±0,2
4
130±5
3+1