



SURGE COUNTER TYPE ProCounter CATALOGUE CARD

APPLICATION

The operation counters type ProCounter are intended for recording a number of operations of the medium and high voltage surge arresters. The operation counter type ProCounter in special version enables the diagnostics of surge arresters.

ADVANTAGES

- reliability of operation,
- simplicity of fixing and maintenance,
- security of operation,
- possibility of diagnostics of surge arresters,
- high counting rate,
- insensitivity to the shape of the wave of discharge current,
- stainless steel terminals,
- small overall dimensions.

CONDITIONS OF OPERATION

The operation counters type ProCounter are designed for operation at the ambient temperature from -40°C (233 K) to $+40^{\circ}\text{C}$ (313 K), at the altitudes not exceeding 1000 m. above sea level and at the rated frequency of the voltage of the power network included from 48 Hz to 62 Hz.

STANDARDS

PN-EN 60099-4: 2009, PN-EN 60099-5: 1999+A1: 2004

The operation counters type ProCounter meet the requirements of NW-001-2001 internal company standard.

DESIGN

The operation counter type ProCounter consists of a set of varistors made of zinc oxide, and an electronic circuit. All the parts of this counter are closed in the hermetic housing made of aluminium alloy and painted by means of powder paint protecting against corrosion. There is a lead-in insulator together with a terminal, intended for connection with a surge arrester, in the upper wall of the housing. There is an earth terminal and a socket, intended for connection with a analyzer of leakage current meter or other measuring devices, in the lower wall of the housing. The terminals of this counter are made of stainless steel.

The operation counters type ProCounter are manufactured in following versions:

- version A - with electromagnetic counter, indicator of the leakage current and with the measuring socket,
- version B - with electromagnetic counter and with the measuring socket,
- version C - with electromagnetic counter,
- version D - with electromagnetic counter, indicator of the leakage current,
- version E - with electromagnetic counter, indicator of the leakage current, socket for transmission via signal line amounts of surges (max. length of signal line is 100* m)
- version F - with two modules F/1 and F/2 connected to each shielded cable to signal transmission for distance 30* m., by hermetic sockets/plugs (IP67). F/1 – transmitter module, F/2 – receiver module with electromagnetic counter, indicator of the leakage current and with the measuring socket, relay output.

*) before of the order length of the signal cable has to be fixed with manufacturer.

The diagnostic socket enables the diagnostics of the surge arresters during their operation without the disconnection of the voltage and without the dismounting of the surge arrester. During the diagnostics carried out by means of the analyzers of leakage current or multimeter or oscilloscope.

PRINCIPLE OF OPERATION

Each of operation of the surge arrester caused by the overvoltage causes the passage of the discharge current through the counter. The passage of the discharge current causes the charging of the capacitor. After the discharge current decay the capacitor is discharged through the winding of the counting mechanism causing the increase of the

indication of the counter by „1“. The electronic circuit of the counters made in special version has the high quality of measuring shunt, which is used for the accurate measurements of the leakage current. The voltage from the shunt is leaded to the measuring socket in the lower wall of the housing, (version F of surge counter allows to perform the measurement in a place away from the mounting position of the surge arrester at a distance up to 30 m * See Fig. 2; 3) which is used for the connection of the diagnostic equipment.

TECHNICAL DATA

The range of the current surges, with the shape 8/20 μ s, causing the operation of the counter	200 ÷ 40000 A
The range of the current surges, with the shape 30/60 μ s, causing the operation of the counter	200 ÷ 2000 A
The long - duration current impulse withstand, with the rectangular shape and duration 2800 μ s	1200 A
The high current impulse withstand, 4/10 μ s	100 kA
The maximum voltage between the terminals of the counter at the current impulse 10 kA, 8/20 μ s	3,1 kV
The maximum voltage between the terminals of the counter at the current impulse 20 kA, 8/20 μ s	3,4 kV
Mass - approximately	2 kg
Overall dimensions:	
width	124 mm
height	237 mm
depth	238 mm
Service position -	horizontal
International Protection Rating	IP67
Connecting terminals -	stainless steel

ADDITIONAL EQUIPMENT

The measuring cable with plugs.
The supporting bracket, hot dip galvanized according to the drawing number ProCounter SCL 4 021.

SPARE PARTS

The operation counter type ProCounter is an unrepairable apparatus. Spare parts are not foreseen.

THE WAY OF PUTTING THE ORDERS

In the order should be given:

The name of the product, type, version (with or without the measuring socket, with or without the indicator), additional equipment (with or without the supporting bracket), quantity.

Examples of the orders:

1. The operation counter for surge arresters, type ProCounter A, with the indicator and with the measuring socket, 3 pieces.
2. The operation counter for surge arresters, type ProCounter B, without the indicator, with the measuring socket, 3 pieces.
3. The operation counter for surge arresters, type ProCounter C, without the indicator and without the measuring socket, 3 pieces.
4. The operation counter for surge arresters, type ProCounter D, with the indicator and without the measuring socket, 3 pieces.
5. The operation counter for surge arresters, type ProCounter E, with the indicator with the socket for transmission via signal line amounts of surges (max. length of signal line is 100* m), 3 pieces.
6. The operation counter for surge arresters, type ProCounter F, with two modules F/1 and F/2 connected to each shielded cable to signal transmission for distance 30* m., by hermetic sockets/plugs (IP67). F/1 – transmitter module, F/2 – receiver module with electromagnetic counter, indicator of the leakage current and with the measuring socket, relay output, 3 pieces.

*) before of the order length of the signal cable has to be fixed with manufacturer.

In order to receive, in the ordered lot of counters, also some additional equipment one should specify additionally this equipment in the order, in the succeeding items, and give the quantity of the ordered pieces.

Examples of the orders for the additional equipment:

1. The measuring cable with plug.
2. The supporting bracket according to ProCounter SCL 4 021 01, 3 pieces.

WARRANTY

The manufacturer warrants the faultless operation of the operation counters type ProCounter during the period of 12 months since the date of purchase.

NOTE

The manufacturer reserves the rights to change design and parameters without information, due to the technical progress.

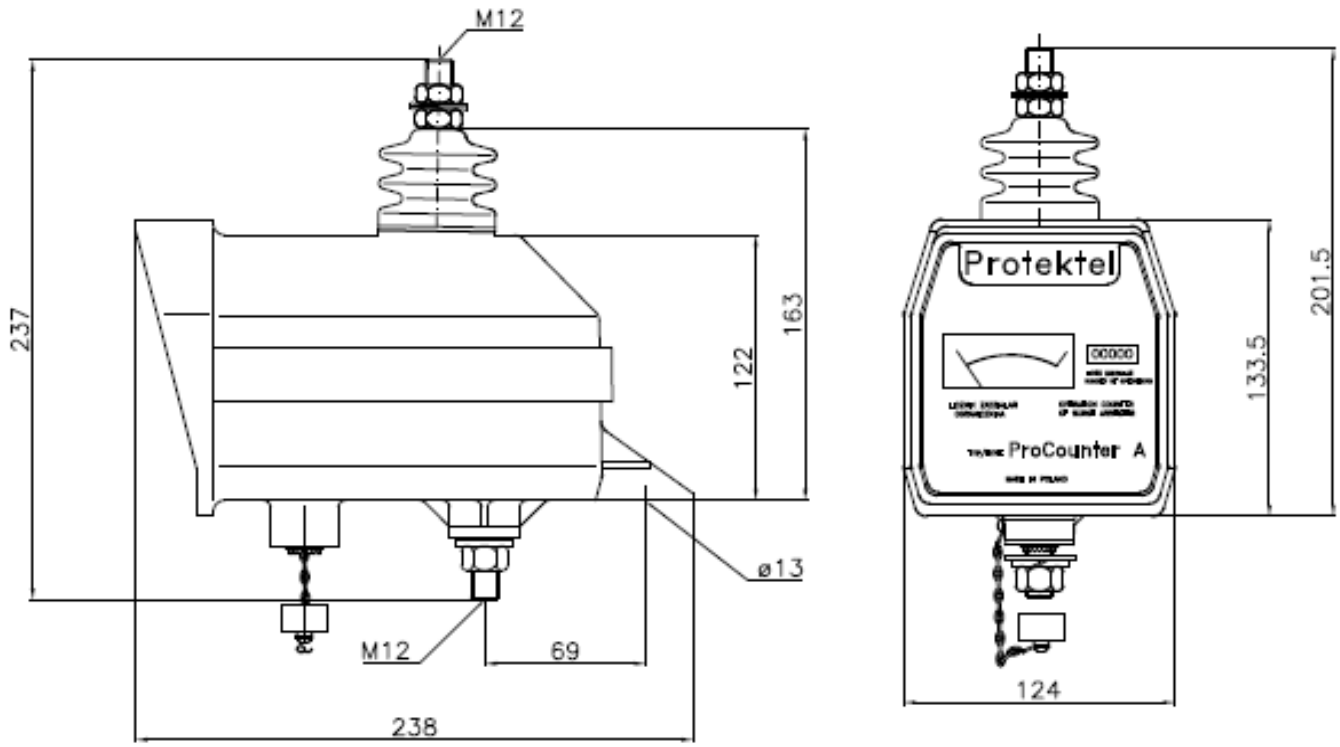


Fig. 1. Dimensional drawing (version A; B; C; D; E; F/1).

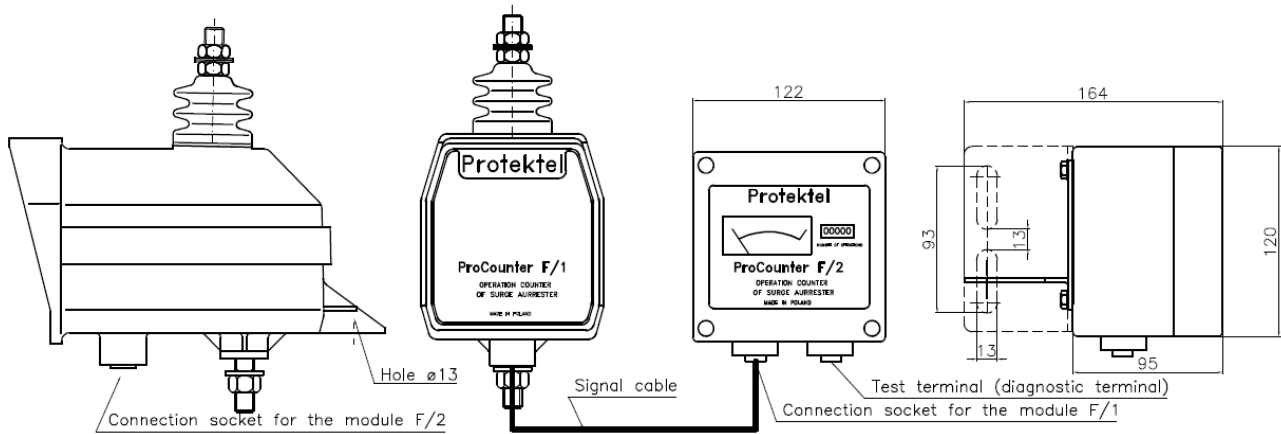


Fig. 2. View version ProCounter F. Dimensional drawing of module F/2.

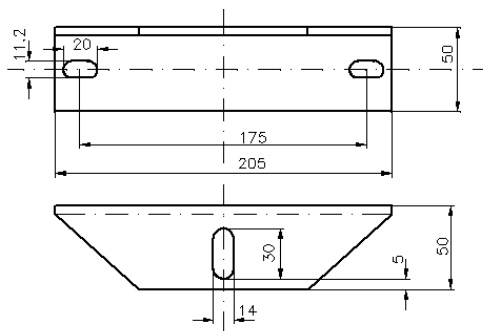


Fig.3. Supporting bracket SCL 4 021

PROTEKTEL Sp. z o.o.
 Piłsudskiego 92 Str.; 06-300 Przasnysz
 Tel./Fax +48 029 7525784
 E-mail: protektel@protektel.pl www.protektel.pl
 Poland