

# Surge Arrester Monitoring system SAM 3.0



## Product description:

- The surge arrester monitoring system SAM 3.0 is used to measure the leakage current of the surge arrester during normal operation and to register discharge events caused by lightning and switching
- The system classifies surge current impulses in three classes
- The discharge events with impulse class, time and date information (time stamp) are saved in a memory
- The surge arrester monitoring system consists of a current sensor and a display device, which are connected by a screened cable of selectable cable lengths
- The display device can be mounted apart from the surge arrester, a place which is convenient for reading
- For alternating current (AC) systems
- For indoor and outdoor installations

## Especially recommended for:

- Monitoring of surge arresters in HV installations
- Monitoring of GIS surge arresters

## Additional certification:

- EMC tested
- IP tested

## Technical data

### Surge event counter

Classification of overvoltage current impulse amplitudes	Class 1: 0.1 .. 1 kA Class 2: 1 .. 10 kA Class 3: 10 .. 100 kA
Overlap between impulse current classes	<20 %
Threshold (power frequency)	100 A <sub>peak</sub>
Time format of saved events	YYYY:MM:DD hh:mm
Memory capacity, non-volatile	2000 events

### Measurement of leakage current at power frequency

Current range	0 .. 20 mA <sub>peak</sub>
Measurement accuracy (at T <sub>amb</sub> ≤ 40 °C)	<5 % of measured value and 0.1 mA <sub>peak</sub>
Measurement accuracy (at T <sub>amb</sub> > 40 °C)	<10 % of measured value and 0.1 mA <sub>peak</sub>
Frequency of system voltage	15 to 62 Hz

### Service conditions

Ambient air temperature T <sub>amb</sub>	-40 to +55 °C (no visual display at temperatures below -20°C)
Altitude	up to 1800 m (for higher altitudes contact ABB)

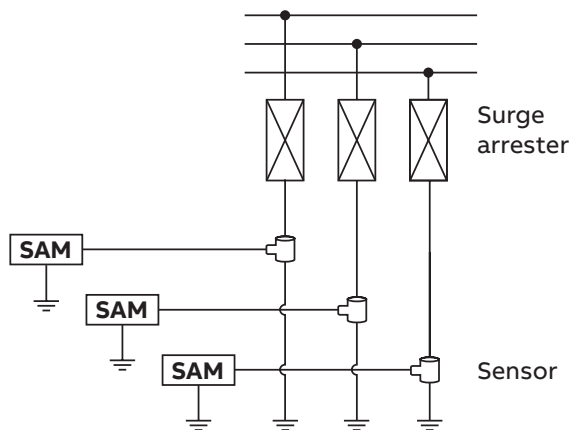
### General data

Degree of protection according to IEC 90529	IP65
EMC tested according to	IEC 60664-1:07 cl. 6.1.2.2.1 IEC 61000-3-2:05 (ed.3) IEC 61000-3-3:94+A1:01+A2:05 (Cons. ed.1.2) IEC 61000-6-2:05 (ed.2) IEC 61000-6-3:06 (ed.2) Class B IEC 61326-1:05 (ed.1)
Weight of display unit	680 g 950 g with support
Weight of sensor	250 g
Battery	1 piece of AAA high energy lithium battery 3.6 V Operating time: 2 years

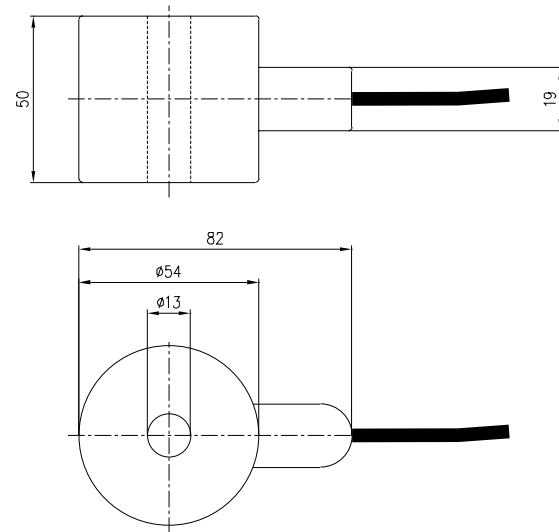
## Options, Diagram and Dimensions

- The sensors can be mounted on outdoor arresters, gas insulated surge arresters and plug-in surge arresters of type POLIM-D..PI-2 and POLIM-D..PI-3 with different mounting kits
- Sensors with cable lengths of 1 m, 7 m, 10 m and 20 m are available
- A support is available for mounting of the display unit. This is especially recommended for outdoor installations. The distance between the holes equals the mounting distance of the surge-counters type SCE, SCF and SCM, which were part of the former product portfolio. Thus replacement of the former products is easily possible.

Circuit diagram with one sensor per surge arrester

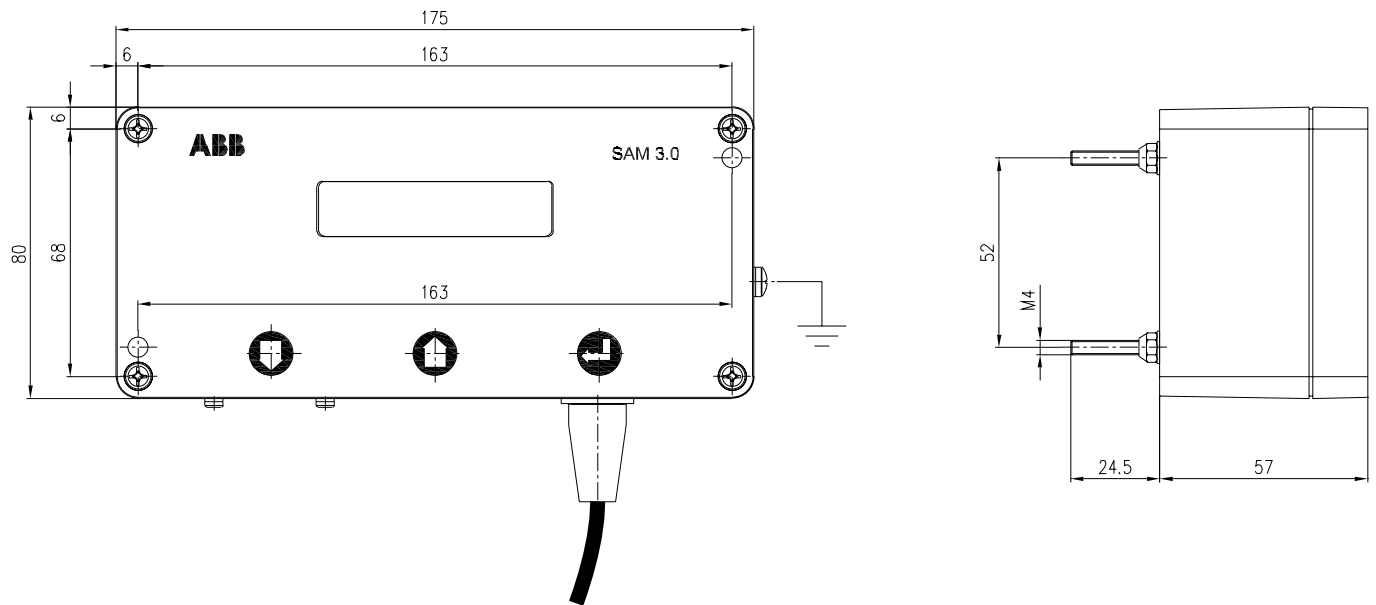


Sensor

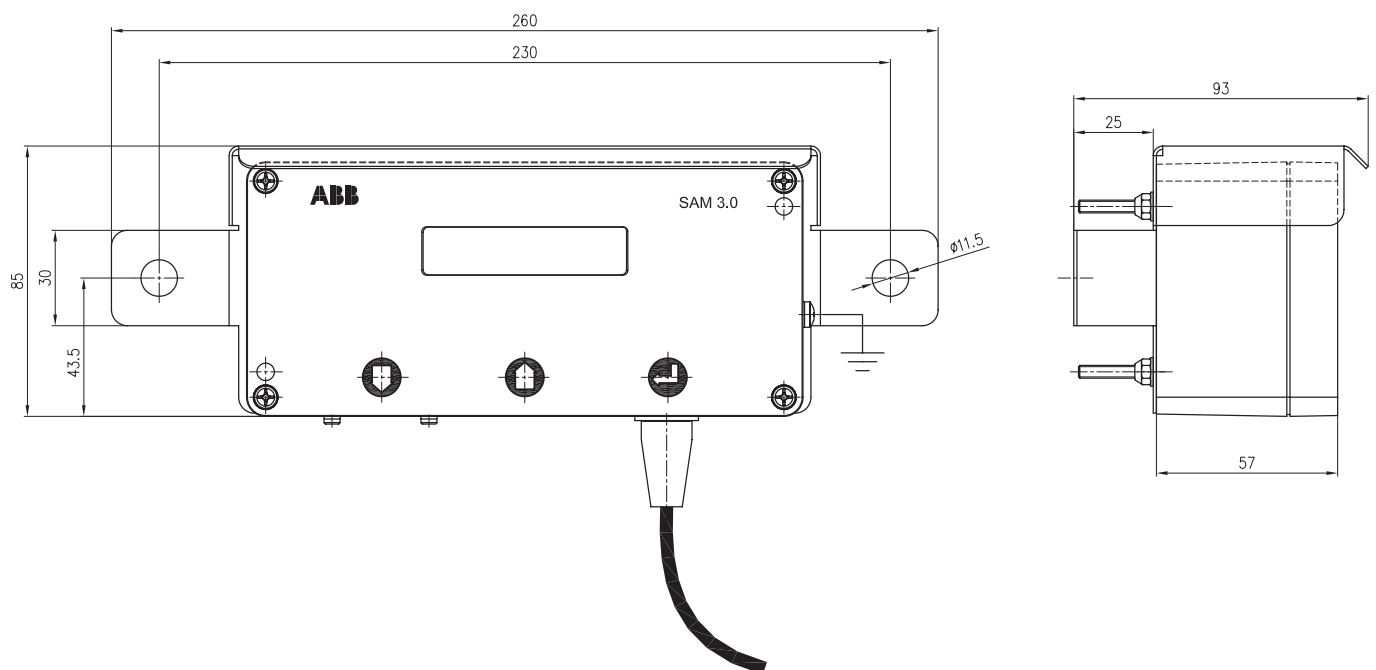


# Dimensions

## Display unit



## Display unit with support



For more information please contact:

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For detailed information for dimensioning of our products see following ABB documents:

- Application guidelines  
Overvoltage protection  
Metal oxide surge arresters in medium voltage systems
- Application guidelines  
Overvoltage protection  
Metal oxide surge arresters in railway facilities

For pdf or print version please send E-mail to:  
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