



TECHNICAL MANUAL

Surge protective device
OPV T2 EKF

1 DESCRIPTION

The surge protective device OPVT2 EKF is designed to protect electrical installations against transient over-voltages and to divert surge currents in 230/400V AC 50/60 Hz networks.

Surge protective device protects power lines against:

1. Voltage surges of electrical installations caused by direct lightning strikes to the external circuit, indirect lightning strikes (within or between clouds or nearby facilities), lightning strikes to the ground;
2. Switching overvoltages in electrical installations resulting from:
 - switching in high-capacity power supply systems;
 - switching in power supply systems close to electrical installations;
 - resonant voltage oscillations in electrical circuits;
 - damage to systems, e.g. ground faults, arc faults.

Table 1

Class OPV	Description
B	Protection against induced pulses from direct lightning strikes to the air-termination system of a building or OHL. Installed in main distribution switchboards.
C	Protection of a facility power distribution network against switching faults; or the second level of lightning protection. Installed in distribution switchboards.
D	Protection of consumers against residual voltage surges, protection against differential (imbalanced) overvoltages, high-frequency interferences filtering. Installed directly next to consumers.

2 TECHNICAL DATA

Table 2 - Main technical data

Parameters	Value		
	B	C	D
Degree of protection by IEC 60529	IP 20		
Cross-section of connected wires, mm ²	from 4 to 25		
Tightening torque, N•m	2,5		
Frequency, Hz	50/60		
Operating temperature Tu, °C	from -15 to +50		
Rated discharge current 8/20 μ s, In, kA	30	20	5

Table 2 continued

Parameters	Value		
	B	C	D
Rated operating voltage U_n , V	400	400	230
Maximum discharge current 8/20 μ s I_{max} , kA	60	40	10
Maximum operating voltage U_c , V	440	440	275
Protection voltage level U_p , kV	2,0	1,8	1,0
Alarm contact parameters	I= 3A, U=250 V, f= 50/60 Hz		

Table 3 - Main technical data

Name	Rated discharge current 8/20 μ s, I_n , kA	Protection voltage, kV	Net weight, kg	Item code
Surge protective device OPV-B/1P In 30kA 440V with alarm EKF	30	2,0	0,173	opv-b1
Surge protective device OPV-B/2P In 30kA 440V with alarm EKF	30	2,0	0,345	opv-b2
Surge protective device OPV-B/3P In 30kA 440V with alarm EKF	30	2,0	0,519	opv-b3

Table 3 continued

Name	Rated discharge current 8/20μs, In, kA	Protection voltage, kV	Net weight, kg	Item code
Surge protective device OPV-B/4P In 30kA 440V with alarm EKF	30	2,0	0,69	opv-b4
Surge protective device OPV-C/1P In 20kA 440V with alarm EKF	20	1,8	0,169	opv-c1
Surge protective device OPV-C/2P In 20kA 440V with alarm EKF	20	1,8	0,338	opv-c2
Surge protective device OPV-C/3P In 20kA 440V with alarm EKF	20	1,8	0,507	opv-c3
Surge protective device OPV-C/4P In 20kA 440V with alarm EKF	20	1,8	0,677	opv-c4
Surge protective device OPV-D/1P In 5kA 275V with alarm EKF	5	1,0	0,158	opv-d1

Table 3 continued

Name	Rated discharge current 8/20 μ s, I _n , kA	Protection voltage, kV	Net weight, kg	Item code
Surge protective device OPV-D/2P In 5kA 275V with alarm EKF	5	1,0	0,317	opv-d2
Surge protective device OPV-D/3P In 5kA 275V with alarm EKF	5	1,0	0,474	opv-d3
Surge protective device OPV-D/4P In 5kA 275V with alarm EKF	5	1,0	0,633	opv-d4



Figure 1 — Alarm contact wiring diagram

3 OVERALL DIMENSIONS

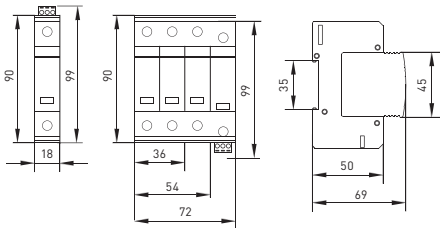


Figure 2 — Overall dimensions

4 INSTALLATION AND OPERATION

The surge protective device shall be mounted and connected by qualified electrical personnel.

Connection options with copper and aluminum wires are supported. Do not connect copper and aluminum wires to one terminal concurrently.

Power supply shall be connected from the terminals 1N (from the top). Tightening torque: max. 2,5 N•m for copper wires; max. 2,2 N•m for aluminum-alloy wires, series 8000.

Connection

The protective conductor (PE) shall be connected to the bottom terminal of the SPD; and the neutral conductor (N) or the phase conductor (L) shall be connected to the top terminal. A device with a guaranteed tripping function (e.g. MCB, RCB0, or fuse) shall be installed in the SPD circuit from the side of power mains.

Table 4 - SPD wiring diagram

Number of poles			
1P	2P	3P	4P

CAUTION! Direct or indirect lightning or surge voltages cause the SPD to trip and fail, with the trip indicator color changing from green to red. Replace the SPD or varistor module.

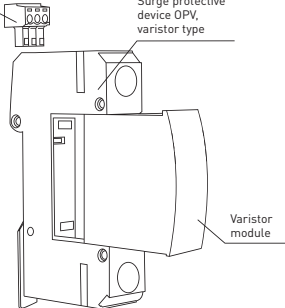
The SPD failure resulting from overvoltage is not covered by the warranty!

Replacement of varistor module and connection of alarm contact block.

Terminal block
for alarm contact

Surge protective
device OPV,
varistor type

Varistor
module



5 DELIVERY SCOPE

Surge protective device OPV T2 EKF is supplied in an individual package. For all available documentation, scan the QR-code on the insert or on the inside of the package.

6 SAFETY REQUIREMENTS

Do not operate surge protective devices with visible mechanical damage. By protection method against electric shock, surge protective devices conform to IEC 61140 class 0.

7 MAINTENANCE

For SPD maintenance, follow national safety rules for operation of electrical Installations.

8 TRANSPORTATION AND STORAGE

Surge protective devices can be transported by any type of enclosed transport that ensures the protection of packed products from mechanical impacts and weather exposure. Surge protective devices shall be stored indoors in the original package at the ambient temperature from -40°C to +70°C and relative humidity of max. 90% at +25°C.

9 DISPOSAL

Life-expired and failed products shall be disposed of in compliance with the national and local laws and regulations in force.

To dispose of the product, send it to an authorized company for recycling in compliance with the national and local laws and regulations in force.

10 MANUFACTURER'S WARRANTY

The manufacturer guarantees the surge protective devices OPV T2 EKF comply with IEC 61643-11, provided that the consumer follows the operation, transportation and storage conditions.

Warranty period: 7 years from the date of sale specified in the sales receipt.

Shelf life: 7 years from the date of manufacture specified on the product package or housing.

Service life: 10 years.

Manufacturer: OOO Electroresheniya, Otradnaya st., 2b/9, 127273, Moscow, Russia, tel. +7 (495) 788-88-15.

MEA regional headquarters: EKF ELECTRICAL SOLUTION FZCO, Office 249, Techno Hub-2, Dubai Silicon Oasis, P.O. box 341079, Dubai, United Arab Emirates, tel. +971-4-547-06-18.

11 CERTIFICATE OF ACCEPTANCE

The surge protective device OPV T2 EKF complies with IEC 61643-11 and has been approved for operation.

Date of manufacture: for information, refer to the product package.

Technical control stamp.

EAC

v3



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