

## Single-pole Phase Comparators

Phase comparators for medium voltage are used to check phase coincidence in three-phase networks. Single-pole phase comparators of type SPPC have the same construction as PFISTERER voltage detectors. This ensures a high level of both safety and reliability.

Phase comparison takes place using a single-pole phase comparator SPPC, and making contact with both conductors one after the other.

### Technical description:

- Available for nominal voltages and nominal voltage ranges from 3 to 36 kV
- Can be used with a rated frequency of 50 Hz
- For reliable phase comparison, a rated frequency of 49.9 - 50.1 Hz is required, with a maximum frequency drift of 10 mHz/s
- Self-test feature
- Automatic switch-off device
- Green, red and yellow LED display
- Removable contact electrode top piece, as forked electrode

The SPPC Type single-pole comparator is designed to meet international Standard IEC 61481.

## Single-pole Phase Comparator SPPC

The single-pole phase comparator SPPC is available for various voltages and ranges of nominal voltages. Depending on type, the phase comparator can also be used when there is precipitation.



No.	Nominal voltage $U_n$ (kV)	Total length $L_G$ (mm)	Insertion depth $A_i$ (mm)	Diameter of insulating element $d$ (mm)	Suitable for use under precipitation
364 788 001	6 - 12	1440	575	24	-
364 825 001	6 - 12	1440	575	24	■
364 825 002	6 - 12	1640	775	24	■
364 788 004	10	1040	349	24	-
364 788 002	12 - 24	1640	775	24	-
364 825 003	12 - 24	1640	775	24	■
364 788 003	24 - 36	1640	775	24	-
364 825 004	24 - 36	1640	775	24	■



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## Single-pole Phase Comparator SPPC, Switchable

The **single-pole phase comparator SPPC** is available for various ranges of nominal voltages. Depending on type, the phase comparator can also be used when there is precipitation. This phase comparator can also be switched between three nominal voltage ranges using the voltage range switching ring. This allows a larger system range to be covered with the same interference field resistance.



No.	Nominal voltage level I	Nominal voltage level II	Nominal voltage level III	Total length	Insertion depth	Diameter of insulating element	Suitable for use under precipitation
	$U_n$ (kV)	$U_n$ (kV)	$U_n$ (kV)	$L_G$ (mm)	$A_i$ (mm)	$d$ (mm)	
364 750 001	6 - 12	12 - 24	24 - 36	1640	775	24	■
364 830 001	6 - 12	12 - 24	24 - 36	1640	775	24	-



## Deltameter 5

The Deltameter 5 is a measuring device for indicating the voltage difference between two phases.

When connecting different medium voltage systems together, protective devices may be actuated as a result of incorrect phase and voltage positions, although phase position tests with IEC 61481 phase comparators have indicated „phase coincidence“. In cases like these, the Deltameter 5 can be used to supplement the phase position tests with phase comparators. The Deltameter 5 indicates the quantitative voltage difference between two phases, on a four-digit segment display with a resolution of 10 V. The Deltameter 5 thus provides a highly precise decision-making tool for the available switching operations.

### Technical description:

- Double pole type with two insulating poles and two convenient handles
- For use on a.c. systems with a nominal frequency of 50 Hz and nominal voltage from 1 to 13 kV
- Can be used when there is precipitation
- 7-segment 4-digit LED display, digit height 14 mm
- 10 V resolution
- $\pm 5\%$  accuracy on a measured value of  $\pm 30$  V
- Connecting cable length 1,000 mm
- Artificial leather case included

No.	Nominal voltage $U_n$ (kV)	Total length $L_e$ (mm)	Insertion depth $A_i$ (mm)
930 450 001	1 - 13	1190	520

## In-service Tests for Phase Comparators

Depending on national regulations in the country concerned, in-service tests are required for phase comparators with nominal voltages above 1 kV. In Germany, these are obligatory under the „Electrical installations and equipment“ (BGV A3) accident prevention rule. Voltage detectors must then, within a maximum period of six years, be submitted to another in-service test and specified checks. The appendix of Standard IEC 61481 gives a description of these tests.

PFISTERER have been successfully carrying out these in-service tests on their own test equipment for many years. The voltage detectors are tested according to the specifications, and immediately adjusted if necessary. Whenever extensive repairs are necessary, we give a cost quotation.

When the tests are completed, the results are documented in detail.

To request an In-service test, please contact your local sales agency.

For customers in Germany please use the following mailing address:

PFISTERER Kontaktsysteme GmbH & Co. KG  
Bereich Wiederholungsprüfung  
Bahnhofstraße 30  
89547 Gerstetten - Gussenstadt  
Germany

No.	Description
200 000 012	Double-pole phase comparators
200 000 016	Phase comparator SPPC - single-range
200 000 017	Phase comparator SPPC - multi-range



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