Product Catalogue

6

Safety Equipment

Capacitive Voltage Detectors and Voltage Detection Systems

ARCUS ELEKTROTECHNIK
ALOIS SCHIFFMANN GMBH

Availability by phone:

For queries concerning products and delivery time, and to place an order by phone, we are available as follows:

+49 (0)89/436 04-0

Monday - Thursday:

8:00 am-12:00 noon and 12:30 pm-16:00 pm

Friday:

8:00 am-12:00 noon

Information concerning this catalogue:

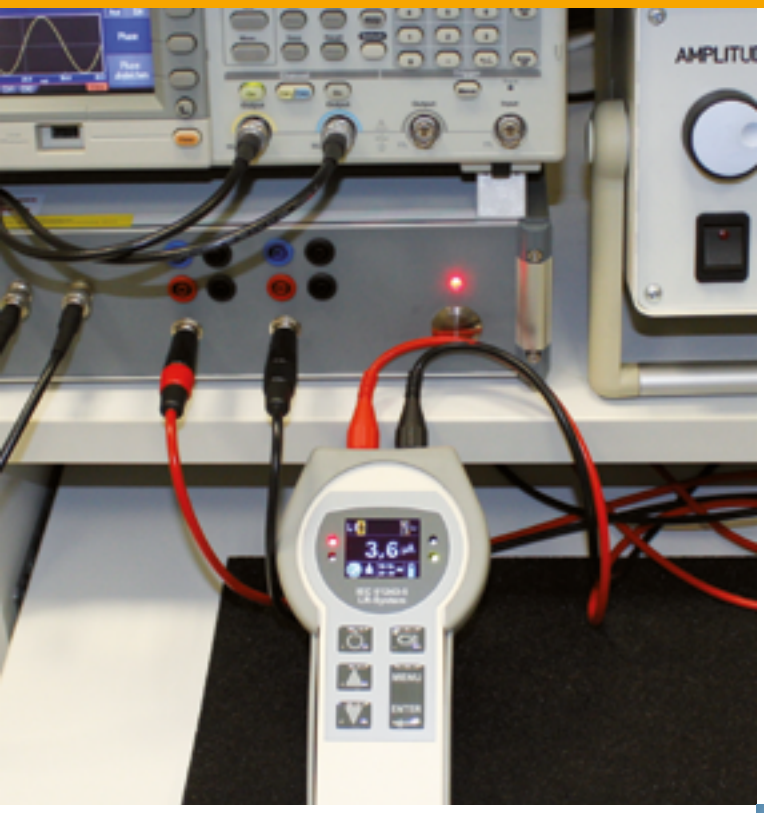
Contents

General

Voltage Detectors

Voltage Detecting Systems

Safety by Quality



As one of the leading manufacturers of voltage detectors and voltage detection systems we develop high-quality products for you.

All voltage detectors and voltage detection systems are “Made in Germany“, and are exclusively produced in our company location in Munich, from development to series production.

Our R&D Department designs detectors under consideration of the requirements of the market. In over 60 years these detectors have reached a high degree of brand awareness in our line of business.

Characteristics such as safety, sustainability, handling, and robustness are considered by our specialists and are already incorporated at the first stage when prototypes are built.

After testing of prototypes for product properties and quality standards, the next step follows.

Our products are manufactured in our company location at constantly high quality.

Our quality standard for first-class functionality:

Each voltage detector and each voltage detection system passes through a 100% mechanical and electrical function test in our factory-integrated high voltage test field.

Test results of all detectors are documented and filed over the product’s complete life cycle.

Competence through Long-Term Experience

Over decades we developed a number of voltage detector models successfully.

Depending on type of electric installation, different detectors are used which have one feature in common:

They give fast and safe indication about absence or presence of voltage in the installation!

The following four product groups are included in our product range, adjusted to different application ranges:

01 **ARCUSDETECT M**
for outdoor and indoor installations up to 36 kV

02 **ARCUSDETECT H**
for outdoor and indoor installations up to 420 kV

03 **ARCUSDISTANT III**
non-contact voltage detector for overhead lines 110-380 kV

04 **ARCUSPHASE DSP**
for encapsulated switchgear up to 52 kV

Our Goal? Your Satisfaction!

All these capacitive voltage detectors are adapted to their usage in an optimal way, and are configured to suit the individual customer requirements.

Customised variations with different transport length, type of indication, or specific threshold values, in many cases can be considered.

Also special requests, such as a different colour for the insulating rod, retrofit contact electrodes, or handle extensions are often possible to fulfil.

This catalogue will give you an overview about our programme of high voltage detectors and accessories. We have arranged these products in the mentioned different groups to facilitate identification. All important details are listed in a table and supported by pictures.

In case of uncertainties how to find a product or how to select a suitable one, please contact us. You will find our contact details on the backside of this catalogue.

This service is a matter of course for us!

Product overview voltage detectors

O not available
X basic version
S special design

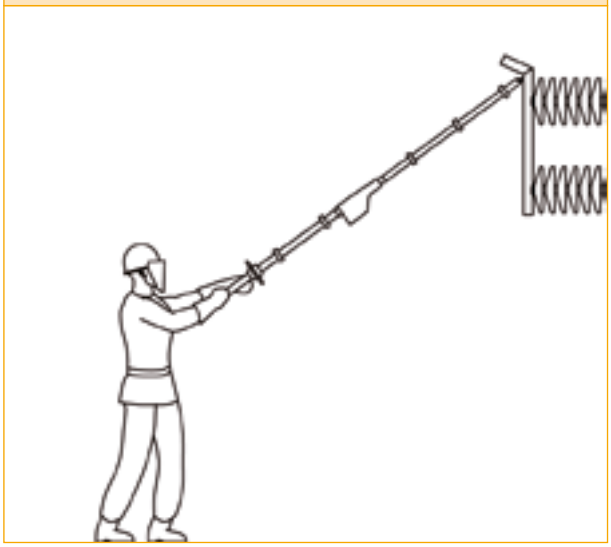
	ARCUSDETECT M	ARCUSDETECT H	ARCUSDISTANT III
IEC 61243-1	X	X	O
Nominal voltage [kV]	up to 36	up to 420	110-380
Usage in railway networks	X	X	O
Usage on overhead lines	X	X	X
Usage in substations	X	X	O
Single voltage detector	X	X	S
Voltage range detector	X	X	X
Frequency: 50 Hz	X	X	X
Frequency: 16.7 Hz	S	S	S
Visual indication	S	O	O
Audible indication	O	O	X
Visual and audible indication	X	X	O
Indoor use	X	S	O
Outdoor use	X	X	X
Self-test	X	X	X
Threaded fork contact (page 30)	S	X	O
Threaded extensions for contact electrode (page 29)	S	O	O
Threaded for additional extensions (page 30)	S	O	O
Threaded handle extensions (page 28)	S	S	O
Bags (page 33)	S	X	S
Carrying cases (page 32)	S	S	S
Wall holder (page 31)	S	S	S

ARCUSDETECT M - application ≤ 36 kV

Substations

50 Hz

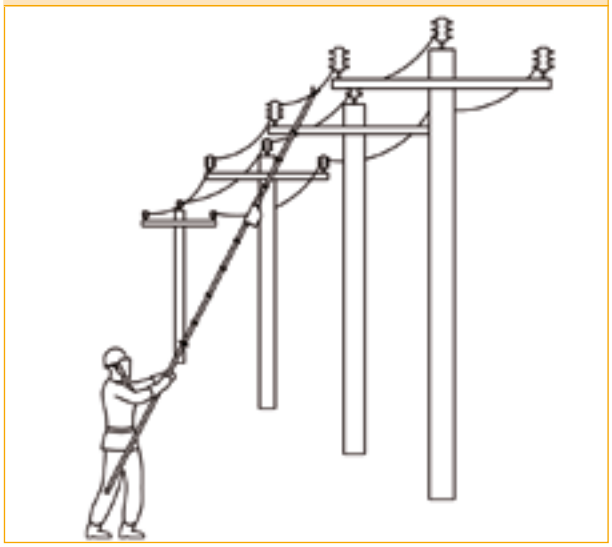
≤ 36 kV



Overhead lines

50 Hz

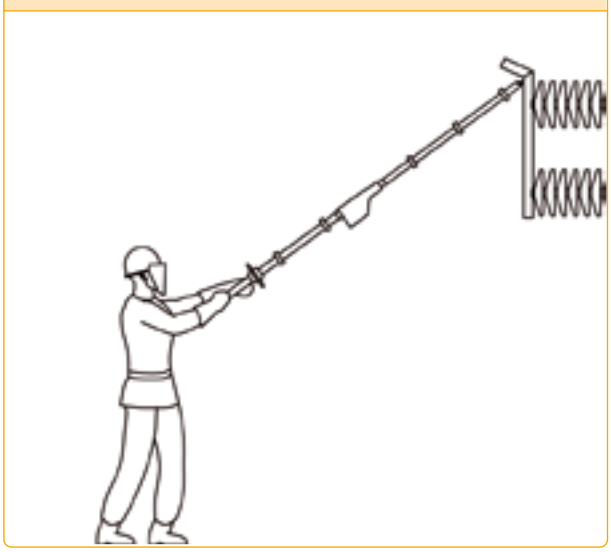
≤ 36 kV



Feeder lines and substations

16.7 Hz

≤ 36 kV



Contact wire installations

16.7 Hz

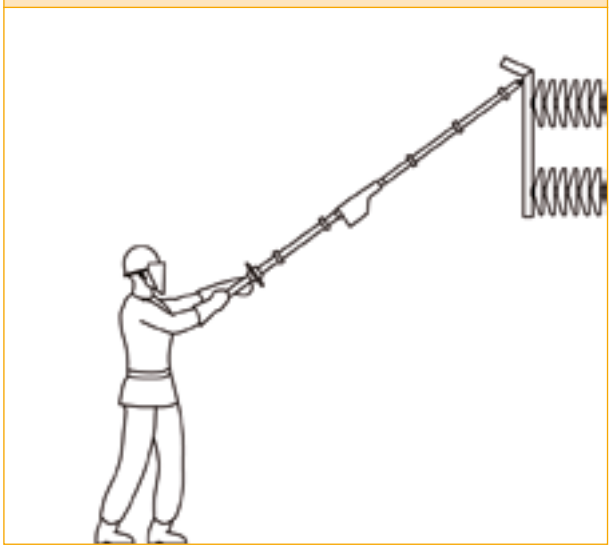
15 kV

ARCUSDETECT H - application ≤ 380 kV

Substations

50 Hz

≤ 420 kV

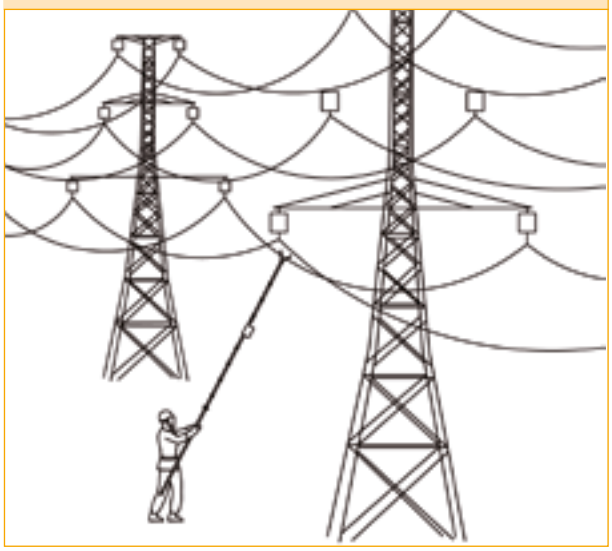


Overhead lines and railway networks

16.7 Hz

50 Hz

≤ 420 kV

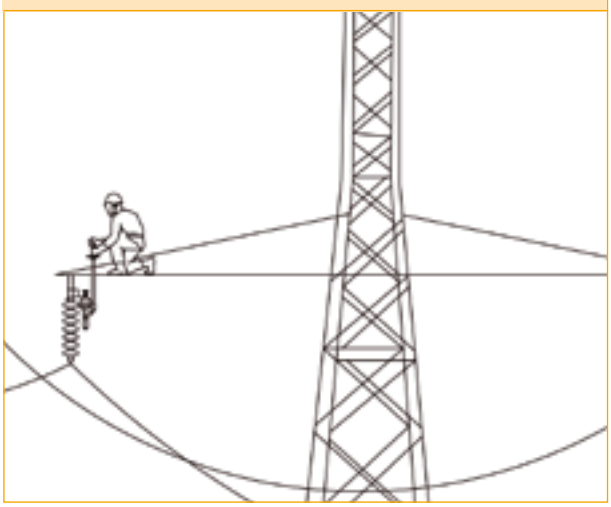


ARCUSDISTANT - application ≤ 380 kV

Overhead lines

50 Hz

≤ 380 kV



Capacitive voltage detectors

Usage

Usage in factory-assembled, type-tested switchgear

The high voltage detector can be used in factory-assembled, type-tested switchgear only under specific conditions. One needs to clarify with the manufacturer of such switchgear, if and where the high voltage detector is permitted to be used.

Usage in IT-Networks (insulated networks)

This voltage detector is not suitable for use in IT-Networks.

Construction

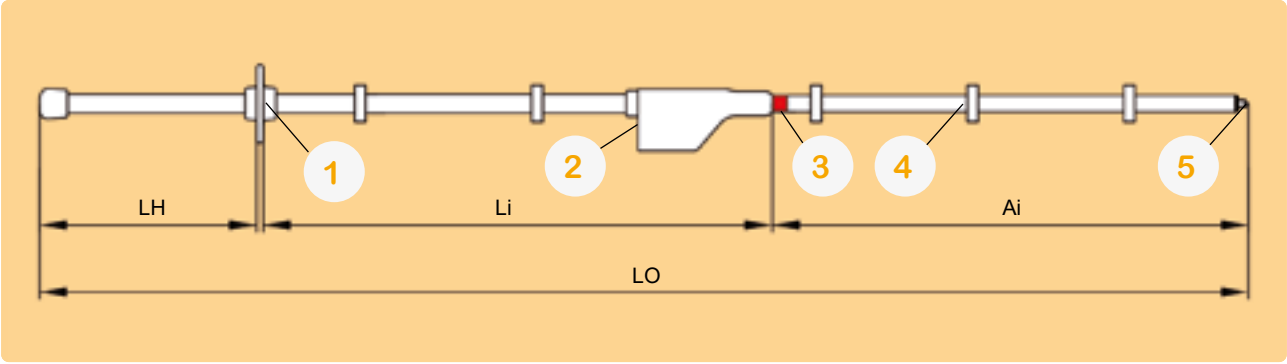
According to the product standards, all voltage detectors are of the following construction:

They have a multiple-part design, with a handle section LH, an insulating element Li, and a head part with insertion depth Ai.

Handle LH:
The handle section is the area in which the high voltage detector is to be held during voltage test.

Insulating element Li:
The insulating element Li is located between the hand guard (1) and the limit mark (red ring) (3). It gives the user the required protective distance and sufficient insulation towards the installation part to be tested for absence of voltage.

Insertion depth Ai:
The insertion depth Ai is the part of the high voltage detector between limit mark (red ring) (3) and contact electrode (5). It reduces the influence of interference fields on the indicator (2).



1) Hand guard
2) Indicator (see signalisation → page 12)
3) Limit mark (red ring)
4) Contact electrode extension
5) Contact electrode

ARCUSDETECT M:
visual and audible signalisation

Indication signal:

Signalisation is effected by long-life LED with colour fidelity for visual indication and/or by a piezo sound element for audible indication (permanent sound and intermitting).

Single voltage and voltage range detectors:

Beside our standard single voltage detectors, in addition our programme includes detectors for voltage ranges. This way one can cover a defined nominal voltage range with only one detector without the need to switch between single nominal voltages.

Nominal frequency:

ARCUS Voltage Detectors are designed for use in 50 Hz and 16.7 Hz power networks.

Climatic conditions:

Our voltage detectors conform to climatic category N (normal) according to IEC 61243-1:

Temperature range: -25 up to +55 °C

Humidity: 20 up to 96 %

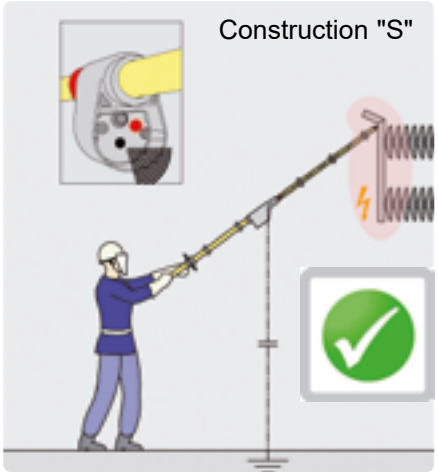
Design and interference fields:

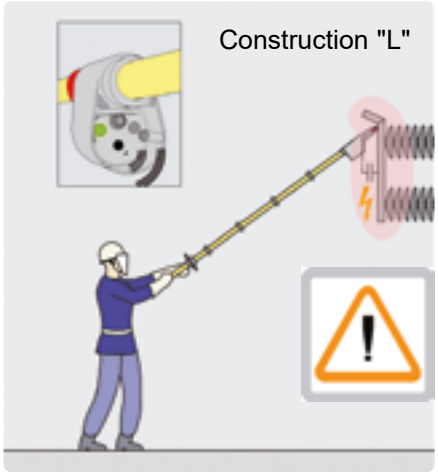
Capacitive voltage detectors measure a very low capacitive current between the indicator which lies on high voltage through the contact electrode, and earth.

Here applies, the less disturbed the potentials high voltage and earth are opposed, the higher is the capacitive current. When the contact electrode of the voltage detector contacts a live installation part, the indicator must be positioned in a way to have the maximum possible distance towards the installation part.

Particularly in substations, but also on overhead line towers (for instance with crossing lines), the complex allocation of the electric field requires an appropriate length of the contact electrode extension, to apply the above mentioned situation.

This design is named "S" for substations and features a clearly higher indication reliability than the short design "L".





For safety reasons we have decided to only offer detectors with category “S“, for substations as well as for overhead lines.

Easy battery exchange:

ARCUS voltage detectors are designed for fast and easy exchange of used batteries.

Simple operation:

Use of light-weight components and multiple-part insulating rods secure safe and simple handling in substations, railway applications, and on pylons.

Safety with self-test

According to EN 50110-1, voltage detectors are to be tested immediately before use, and if possible also after use.

All ARCUS-Detectors are equipped with a built-in self-test element. Within the electronic circuit it tests all components. In case components or soldering points are not in good order, the self-testing device will recognise it and indicate the fault. Also the battery charge condition is included in the self-test.

In our detectors, for safety reasons all electric circuits are self-tested without any limitation, even the contact electrode extensions including the contact electrode itself - up to 420 kV.

Different Earthing arrangements

Important for the correct indication of the detector is its area of application and the related earthing arrangement of the power network.

We distinguish between one- and three-phase a.c.networks (three-phase current networks).

Earthing arrangements:

Symbols	Simplified picture	Net system
		effectively single-side isolated neutral 1-phase system (rail energy lines and contact wires)
		effectively centre-isolated neutral 1-phase system (traction current lines)
		effectively star point isolated neutral 3-phase system (overhead lines and substations)

Non-contact voltage detector

Usage

For overhead lines up to 380 kV the acoustic non-contact voltage detector ARCUSDISTANT III is suitable, a contact-less tester for detection of absence of voltage.

Here the user tests the absence of voltage directly from the cross-arm of the tower.

Our distance testers conform to DIN VDE V 0682-417. The design is based on our capacitive voltage detectors which are in conformance with standard IEC 61243-1, and fulfil all requirements on devices for measurement and testing in electric installations. This way these testers offer a high level of safety.

Since decades our distance testers are used successfully by many clients.

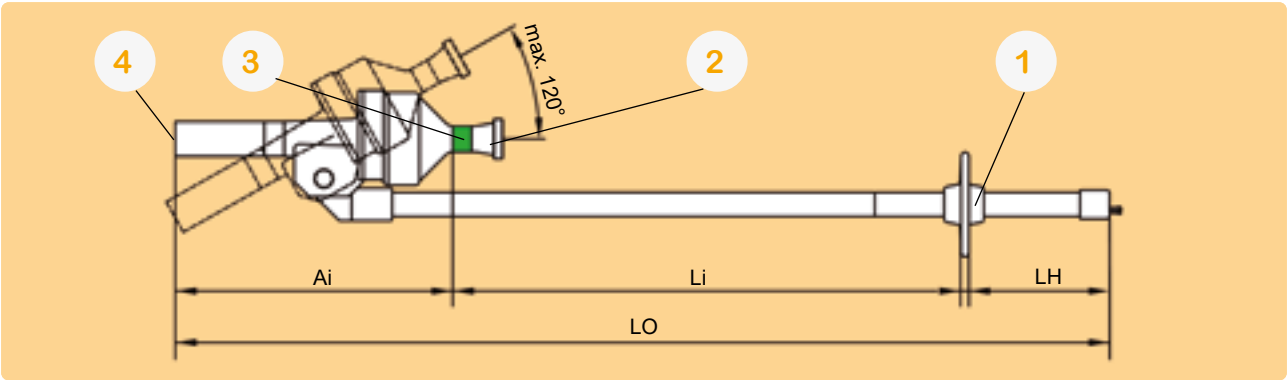
Construction

All distance testers have the following construction:

They have a 2-part design, with a handle section LH, an insulating element Li, and a head part with insertion depth Ai.

Handle LH:
The handle section is the area in which the high voltage detector is to be held during voltage test.

Insulating element Li:
The insulating element Li is located between the hand guard (1) and the positioning mark Green Ring (3). It offers the user the required protective distance and sufficient insulation towards the installation part which needs to be tested for absence of voltage.



1) Limit mark
2) Acoustic indicator
3) Positioning mark Green Ring
4) Antenna tube

Simple.
Multi-functional.
Safe.

ARCUSPHASE DSP

- Versatile voltage detection system for encapsulated switchgear
- IEC 61243-5.
- Precise measurement of current, frequency, and phase angle.
- Digital oscilloscope.
- Real-time FFT-analysis.

ARCUSPHASE DSP - product overview

O not available
X basic version

	ARCUSPHASE DSP 1x VDS[1)]	ARCUSPHASE DSP 2x VDS[1)] & UPC[2)]
IEC 61243-5	X	X
Nominal voltage [kV]	up to 52	up to 52
Use in encapsulated switchgear	X	X
Frequency: 50 Hz	X	X
Visual indication	X	X
Single-pole voltage detection	X	X
Two-pole voltage detection	O	X
Measurement of phase angle with phase rotation indicator	O	X
Measurement of frequency	X	X
Self-test	X	X
Test of interface (periodic testing)	X	X
Automatic switch-off	X	X
Oscilloscope	X	O
FFT (Fast Fourier Transformation)	X	O
Date and Time	X	X
Interfaces extendible with adaptors	X	X
OLED-Display	X	X
Indoor use	X	X
Outdoor use	X	X
With batteries	X	X
With recharger set	X	X

1) VDS=Voltage Detecting System

2) UPC=Universal Phase Comparator

ARCUSPHASE DSP - Simple. Multi-functional. Safe.

ARCUSPHASE DSP is a simple to use voltage detection system for encapsulated switchgear according to IEC 61243-5 with precise measurement of current, frequency, and phase angle.

The latest series of our devices additionally offers you, depending on model, an integrated digital oscilloscope and a real-time FFT-analysis.

Simple menu navigation

Precise current measurement

Precise frequency measurement

Precise phase angle measurement with phase rotation indicator

Digital oscilloscope

Real-time FFT-analysis

Technical data

Nominal frequency: 50 Hz

Threshold value: 4.5 V at 2.0 MOhm

Environmental temperature: -20 °C up to +60 °C

Protection class: IP 54

Usage: Indoor and outdoor

Phase balance: Phase angle -20 ° up to +20 ° (ARCUSPHASE DSP 2x VDS & UPC)

Model with batteries:
- 3 x Alkali Mangan size LR6 or AA or
- 3 x Lithium size FR6 or AA

Model with rechargeable batteries:
- with recharger set for rechargeable batteries

Standard: IEC 61243-5

Dimensions: 210 x 95 x 40 mm

Weight: 300 g (excluding measuring lines)

Highlights & details

- Voltage detection system for capacitive interface systems: HR-, LR-, LRM-, and LRP-interfaces by suitable adaptors.
- Accuracy of current measurement; resolution of current measurement: 100 nA.
- Accuracy of frequency measurement; resolution of frequeny measurement: 0.1 Hz.
- Accuracy of phase angle (only in model 2x VDS & UPC); resolution of phase angle: 0.5 ° with phase rotation indicator.
- Real-time FFT-analysis (only in model : 1x VDS).
- Digital oscilloscope (only in model : 1x VDS).
- Test of interface with real effective value of interface current according to IEC 61243-5.
- Integrated self-testing device for all system-relevant groups of components including measuring lines.
- Automatic and manual selection of measuring functions.
- Simple and comfortable configuration by means of a clear menu navigation and extra-large pressure keys.
- Large high-contrast OLED colour display with additional LED-signalisation.
- Detachable measuring lines.
- Ergonomic housing to IP54.
- Protector for rough conditions of use.
- CE-Conformity Declaration: EMC-Directive 2014/30/EU.
- RoHS-compliant.
- High operating safety by use of high-quality components.

Voltage detectors for railway systems, overhead lines, and switchgear

ARCUSDETECT M

For indoor and outdoor use up to 36 kV

→ page 20 et seq.

ARCUSDETECT H

For outdoor use up to 420 kV

→ page 25 et seq.

ARCUSDISTANT III

For overhead lines 110-380 kV

→ page 27 et seq.

Accessories

Extensions for contact electrode, fork contacts, additional extensions, handle extensions

→ page 28 et seq.

Wall holders, cases, bags

→ page 31 et seq.

Voltage detection systems for encapsulated switchgear

ARCUSPHASE DSP 1x VDS

1-polar voltage detection system up to 52 kV

→ page 36 et seq.

ARCUSPHASE DSP 2x VDS & UPC

2-polar voltage detector and phase comparator up to 52 kV

→ page 38 et seq.

Case sets and bags

→ page 40 et seq.

Spare parts and accessories

→ page 42 et seq.

According to IEC 61243-1

Technical information:

Nominal frequency: 50 Hz

Indication signal:
visual (2 LED / 1x green, 1x red),
audible (piezo oscillator)

Climatic category: N (normal)

Temperature range: -25 up to 55 °C

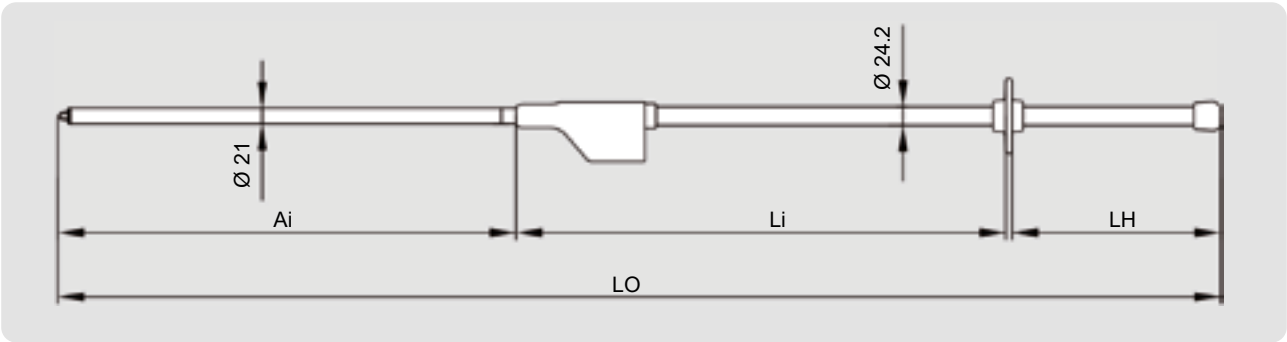
Humidity: 20 to 96 %

Design: S

Power supply: 9-volt battery; lithium

Accessories:

- Fork contacts → page 30
- Additional extensions → page 30
- Extensions for contact electrode → page 29
- Handle extensions → page 28
- Carrying bags, cases and wall holders → page 31 et seq.



Type overview										
U_n [kV]	f [Hz]	Net system	LO [mm]	Ai [mm]	Li [mm]	LH [mm]	Transport length [mm]	n-parts	Bag(1)	Type number
Single voltage detector										
6	50	Y	1219	376	534	300	700	2	615 092	697 044
10	50	Y	1219	376	534	300	700	2	615 092	610 221
20	50	Y	1399	556	534	300	740	2	615 092	610 222
30	50	Y	1579	736	534	300	920	2	615 096	610 223
Voltage range detector										
5-10	50	Y	1399	556	534	300	740	2	615 092	697 006
10-20	50	Y	1639	796	534	300	980	2	615 096	610 234
10-30	50	Y	1639	796	534	300	980	2	615 096	610 235

1) not included

Y effectively star point isolated neutral 3-phase system

According to IEC 61243-1

Technical information:

Nominal frequency: 50 Hz

Indication signal:
visual (2 LED / 1x green, 1x red),
audible (piezo oscillator)

Climatic category: N (normal)

Temperature range: -25 up to 55 °C

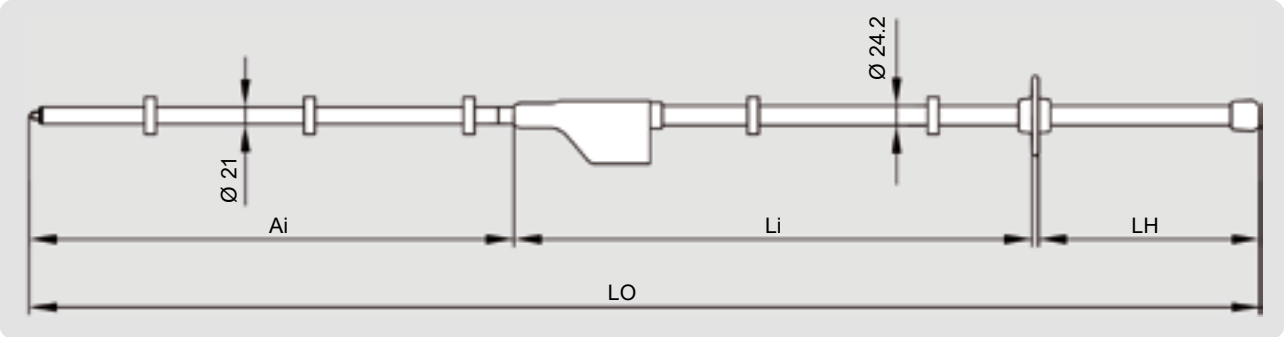
Humidity: 20 to 96 %

Design: S

Power supply: 9-volt battery; lithium

Accessories:

- Fork contacts → page 30
- Additional extensions → page 30
- Extensions for contact electrode → page 29
- Handle extensions → page 28
- Carrying bags, cases and wall holders → page 31 et seq.



Type overview										
U_n [kV]	f [Hz]	Net system	LO [mm]	Ai [mm]	Li [mm]	LH [mm]	Transpor length [mm]	n-parts	Bag(1)	Type number
Single voltage detector										
10	50	Y	1219	376	534	300	700	2	615 092	610 226
20	50	Y	1399	556	534	300	740	2	615 092	610 227
30	50	Y	1579	736	534	300	920	2	615 096	610 228
Voltage range detector										
5-10	50	Y	1399	556	534	300	740	2	615 092	697 007
10-20	50	Y	1639	796	534	300	980	2	615 096	610 236
10-30	50	Y	1819	976	534	300	1160	2	615 095	697 012
11-33	50	Y	1819	976	534	300	1160	2	615 095	697 035
20-30	50	Y	1639	796	534	300	980	2	615 096	610 237

1) not included

Y effectively star point isolated neutral 3-phase system

Basically to IEC 61243-1 (frequency 16.7 Hz) (and following DIN VDE V 0682-421)

Technical information:

Nominal frequency: 16.7 Hz

Indication signal:
visual (2 LED / 1x green, 1x red),
audible (piezo oscillator)

Climatic category: N (normal)

Temperature range: -25 up to 55 °C

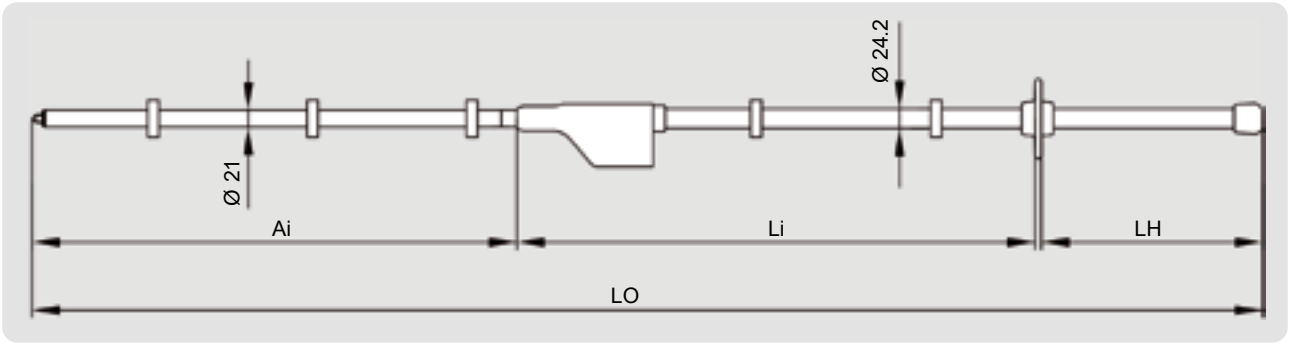
Humidity: 20 to 96 %

Design: S

Power supply: 9-volt battery; lithium

Accessories:

- Fork contacts → page 30
- Additional extensions → page 30
- Extensions for contact electrode → page 29
- Handle extensions → page 28
- Carrying bags, cases and wall holders → page 31 et seq.



Type overview										
U_n [kV]	f [Hz]	Net system	LO [mm]	Ai [mm]	Li [mm]	LH [mm]	Transport length [mm]	n-parts	Bag(1)	Type number
Single voltage detector										
15	16.7	I	1399	556	534	300	740	2	615 092	697 013
33	16.7	I	1579	736	534	300	920	2	615 096	697 063
Voltage range detector										
10.5-15	16.7	I	1879	736	834	300	1000	2	615 096	697 010
15-33	16.7	I	1819	976	534	300	1160	2	615 095	697 076

1) not included

I effectively single-side isolated neutral 1-phase system

Basically to IEC 61243-1 (frequency 16.7 Hz) (and following DIN VDE V 0682-421)

Technical information:

Nominal frequency: 16.7 Hz

Indication signal:
visual (2 LED / 1x green, 1x red),

Climatic category: N (normal)

Temperature range: -25 up to 55 °C

Humidity: 20 to 96 %

Design: S

Power supply: 9-volt battery; lithium

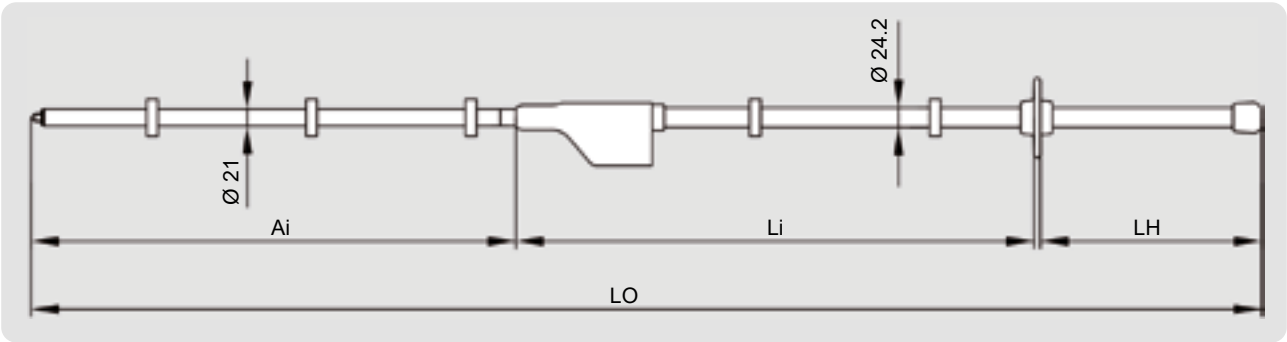
With transport eye for carabiner, with threaded fork contact.

Usage:

Direct voltage detection from mast or working platform.

Accessories:

- Carrying bags, cases and wall holders → page 31 et seq.

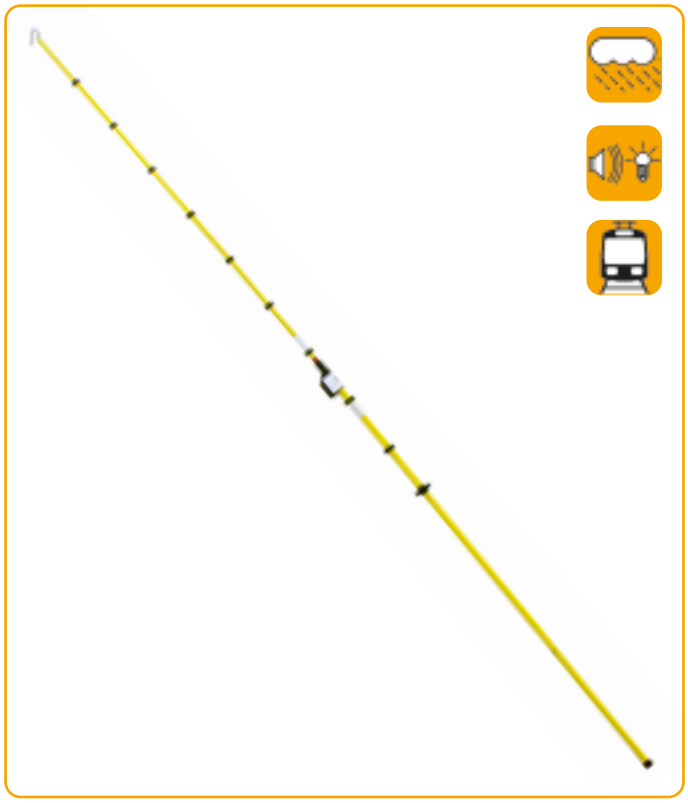


Type overview										
U_n [kV]	f [Hz]	Net system	LO [mm]	Ai [mm]	Li [mm]	LH [mm]	Transport length [mm]	n-parts	Bag[1)]	Type number
15	16.7	I	1579	736	534	300	920	2	615 096	610 240

1) not included

I effectively single-side isolated neutral 1-phase system

Following VDE 0681 part 6



Technical information:

Nominal frequency: 16.7 Hz

Indication signal:
visual (2 LED / 1x green, 1x red),
audible (piezo oscillator)

Climatic category: N (normal)

Temperature range: -25 up to 55 °C

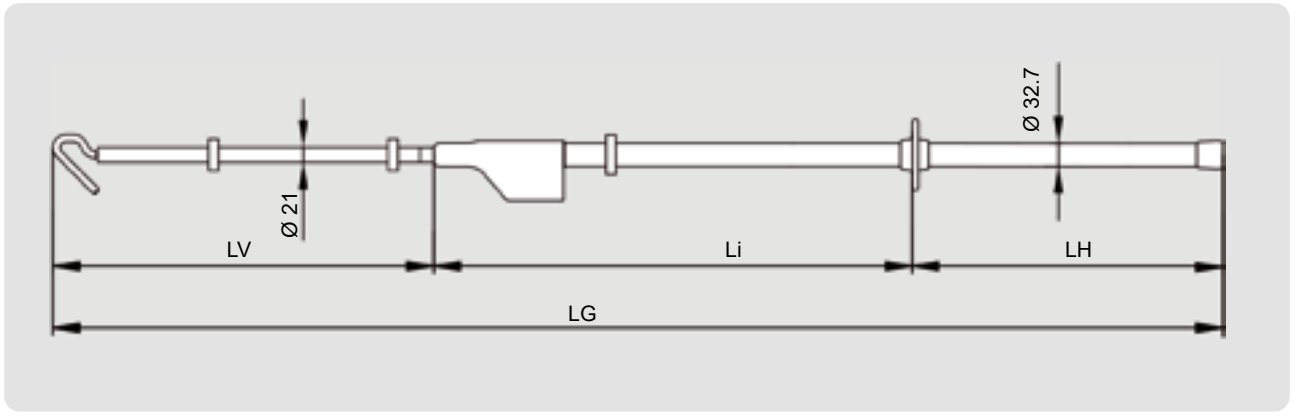
Humidity: 20 to 96 %

Design: S

Power supply: 9-volt battery; lithium

Accessories:

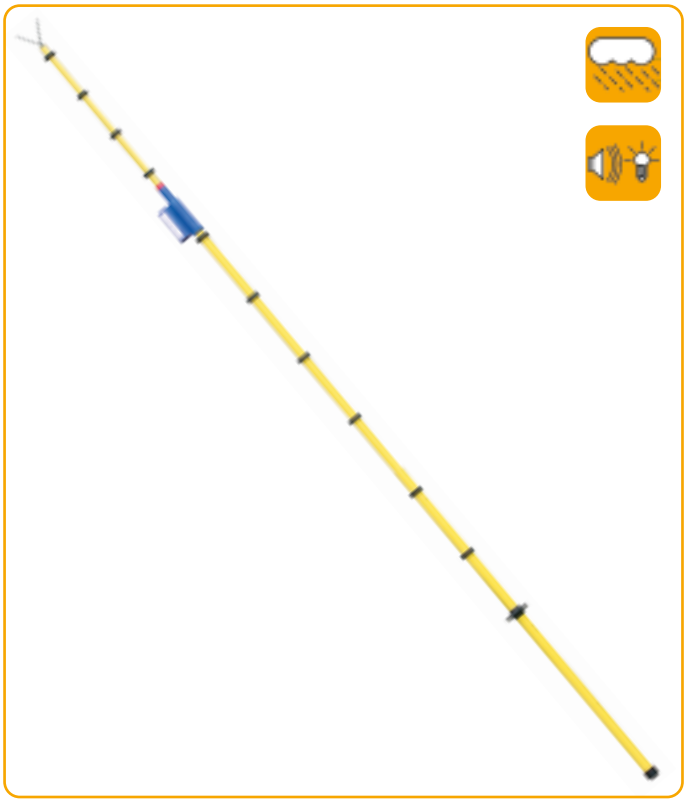
Carrying bag included



Type overview										
U_n [kV]	f [Hz]	Net system	LG [mm]	LV [mm]	Li [mm]	LH [mm]	Transport length [mm]	n-parts	Bag	Type number
15	16.7	⎸	4658	2155	792	1650	2400	2	610 023 26	610 241
15	16.7	⎸	4658	2155	1014	1428	1020	6	615 096	610 330

⎸ effectively single-side isolated neutral 1-phase system

According to IEC 61243-1



Technical information:

Nominal frequency: 50 Hz

Indication signal:
visual (2 LED / 1x green, 1x red),
audible (piezo oscillator)

Climatic category: N (normal)

Temperature range: -25 up to 55 °C

Humidity: 20 to 96 %

Design: S

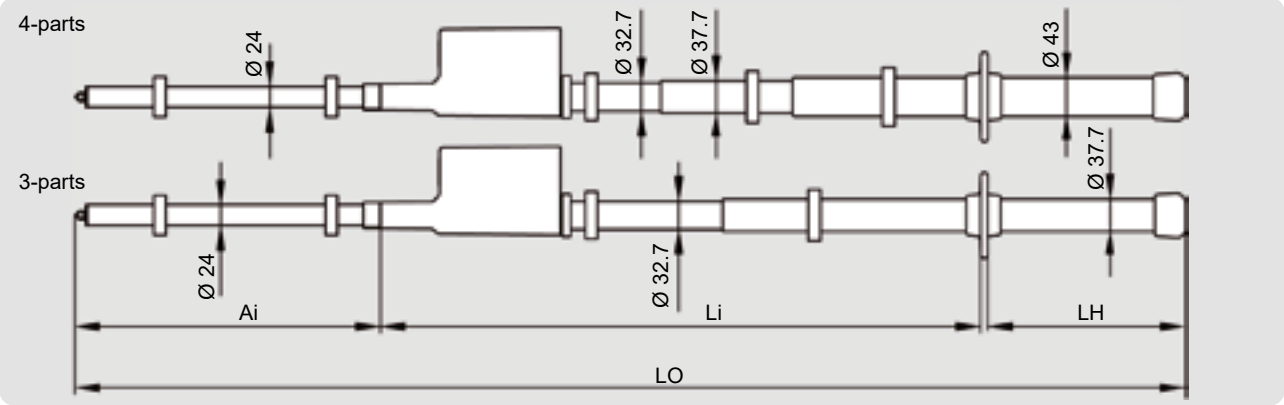
Power supply: 9-volt battery; lithium

Simple battery exchange without additional tool

Including carrying bag and threaded fork contact for overhead lines

Accessories:

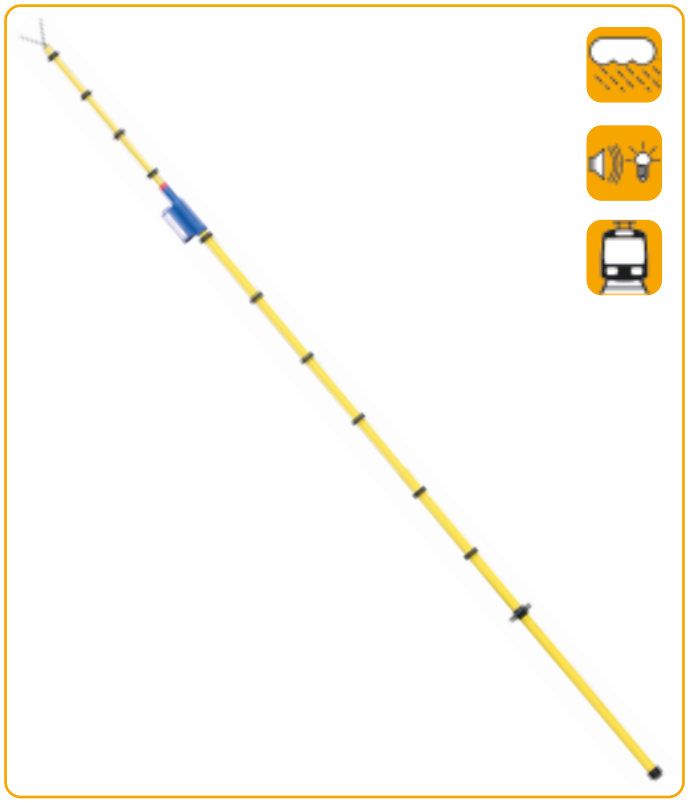
- Handle extensions → page 28
- Cases and wall holders → page 31 et seq.



Type overview										
U_n [kV]	f [Hz]	Net system	LO [mm]	Ai [mm]	Li [mm]	LH [mm]	Transport length [mm]	n-parts	Bag	Type number
Singel voltage detector										
110	50	Y	3635	736	2091	800	1500	3	615 103	640 002
150	50	Y	3835	736	2300	791	1600	3	615 102	697 064
220	50	Y	3835	736	2300	791	1600	3	615 102	640 004
380	50	Y	5395	736	3600	1051	1600	4	615 102	640 005
Voltage range detector										
60-110	50	Y	2735	736	1300	691	1000	3	615 096	640 001
110-220	50	Y	3835	736	2300	791	1600	3	615 102	640 003
380-420	50	Y	5395	736	3600	1051	1600	4	615 102	640 006

Y effectively star point isolated neutral 3-phase system

Basically to IEC 61243-1 (frequency 16.7 Hz) and following DIN VDE V 682-421



Technical information:

Nominal frequency: 16.7 Hz

Indication signal:
visual (2 LED / 1x green, 1x red),
audible (piezo oscillator)

Climatic category: N (normal)

Temperature range: -25 up to 55 °C

Humidity: 20 to 96 %

Design: S

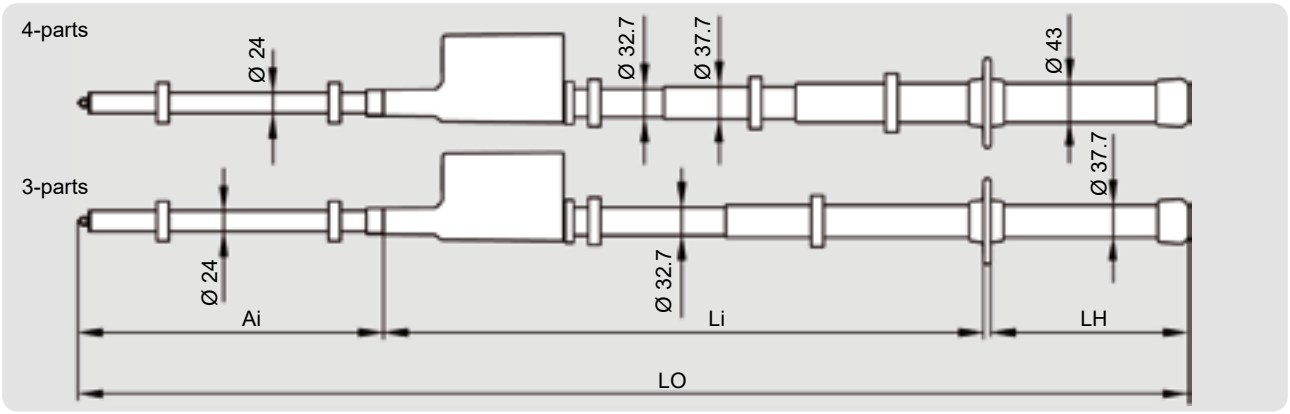
Power supply: 9-volt battery; lithium

Simple battery exchange without additional tool

Including carrying bag and threaded fork contact for overhead lines

Accessories:

- Fork contacts → page 30
- Handle extensions → page 28
- Cases and wall holders → page 31 et seq.



Type overview										
U_n [kV]	f [Hz]	Net system	LO [mm]	Ai [mm]	Li [mm]	LH [mm]	Transport length [mm]	n-parts	Bag	Type number
Single voltage detector										
66	16.7	⊣⊢	2735	736	1300	691	1000	3	615 096	610 328
110	16.7	⊣⊢	3635	736	2091	800	1500	3	615 103	610 326
132	16.7	⊣⊢	3835	736	2300	791	1600	3	615 102	697 050
Voltage range detector										
33+66	16.7	⊣+⊢	2735	736	1300	691	1000	3	615 096	610 327
66-132	16.7	⊣⊢	5755	1096	3600	1051	1600	4	615 102	610 329

⊣⊢ effectively centre-isolated neutral 1-phase system

⊣ effectively singe-side isolated neutral 1-phase system

Following DIN VDE V 0682-417

Technical information:

Nominal frequency: 50 Hz

Indication signal:
audible (piezo oscillator)

Temperature range: -25 up to 55 °C

Humidity: 20 to 96 %

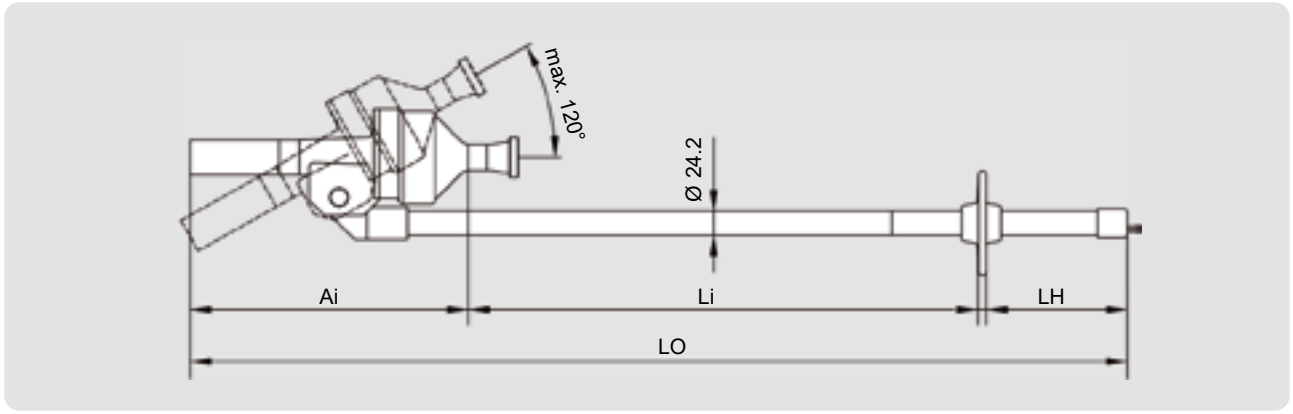
Power supply: 9-volt battery; lithium

Usage:

ARCUSDISTANT III non-contact voltage detector with audible indication is designed for contactless verification of absence of voltage on high voltage overhead lines, from the crossarm of the tower.

Accessories:

- Operating rod, transport eye → page 29
- Carrying bags and wall holders → page 31 et seq.



Type overview										
U_n [kV]	f [Hz]	Net system	LO [mm]	Ai [mm]	Li [mm]	LH [mm]	Transport length [mm]	n-parts	Bag(1)	Type number
110	16.7	⊣⊢	918	274	494	150	750	2	615 065	610 001 015
110-380	50	⅄	918	274	494	150	750	2	615 065	610 250

1) not included

⅄ effectively star point isolated neutral 3-phase system

⊣⊢ effectively centre-isolated neutral 1-phase system

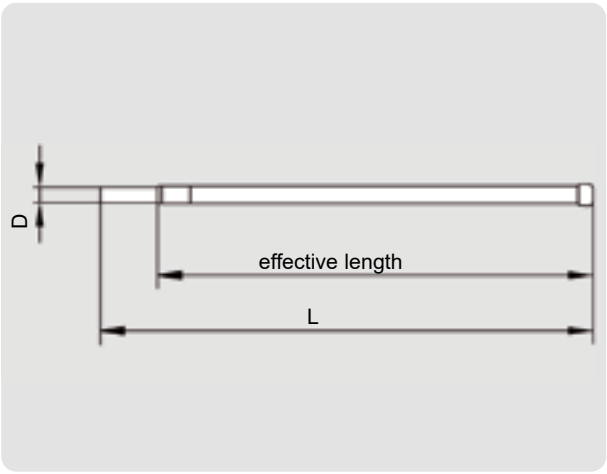
611 082

Technical information:

Usage: for ARCUSDETECT M or ARCUSDETECT H

Material: tube of synthetic material

Threaded connection: on one end



Type overview			
for D [mm]	**L [mm]**	**effective length [mm]**	**Type number**
24.2	500	435	611 086
24.2	1000	935	611 078
24.2	1500	1435	611 079
24.2	2000	1935	611 080
37.7	1000	860	611 075
37.7	1500	1360	611 076
37.7	2000	1860	611 077
43	1000	860	611 082
43	1500	1360	611 083
43	2000	1860	611 084

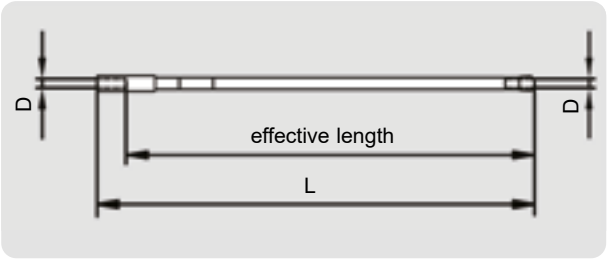
611 081

Technical information:

Usage: for ARCUSDETECT M

Material: tube of synthetic material

Threaded connections: on both ends



Type overview			
for D [mm]	**L [mm]**	**effective length [mm]**	**Type number**
24.2	1000	935	611 081
24.2	1500	1435	611 090

Further models available upon request.

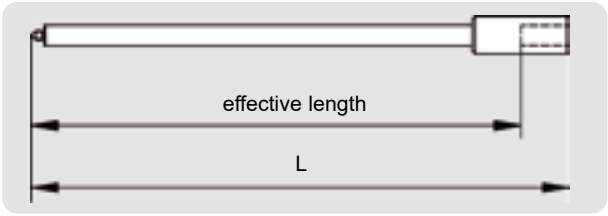
Extensions for Contact Electrode (Threaded), Transport Eye and Operating Rod

611 069

Technical information:

Usage: for single voltage detectors series ARCUSDETECT M

Material:
Test electrode: aluminium alloy
Extension: tube of synthetic material



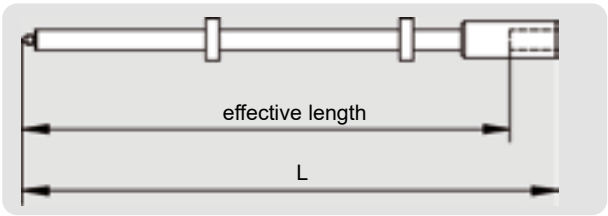
Type overview		
L [mm]	**effective length [mm]**	**Type number**
554	492	611 069
914	852	611 070

611 072

Technical information:

Usage: for single voltage detectors series ARCUSDETECT M

Material:
Test electrode: aluminium alloy
Extension: tube of synthetic material



Type overview		
L [mm]	**effective length [mm]**	**Type number**
554	492	611 072
914	852	611 073

611 214

Transport eye for ARCUSDISTANT III:

Materials: Polyamide

Usage: Facilitate transport of ARCUSDISTANT III, e.g. by means of a carabiner, when climbing up or down an overhead line tower.

611 217

Operating rod for ARCUSDISTANT III:

The operating rod with hand strap for use with ARCUSDISTANT III offers a safe use in large heights.
The hand strap helps to prevent loss in case the tester falls down.
This insulating rod is extendable and only suitable for use with ARCUSDISTANT III.
Total length: 875 mm, effective length: 830 mm

Fork Contacts and Additional Extensions (Threaded)

Fork contacts

610 224 14

610 224 12

610 224 11

Technical information:

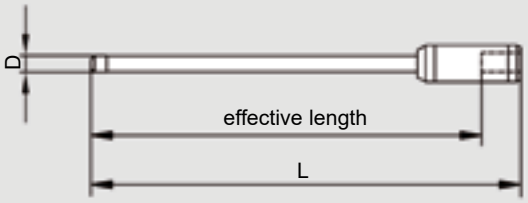
Usage: for overhead lines,
with threaded connection to ARCUSDETECT M
and ARCUSDETECT H
Fork contact: Aluminium alloy

Type overview		
Un [kV]	**L [mm]**	**Type number**
> 24 kV	30	610 224 14
> 52 kV	40	610 224 12
> 72.5 kV	90	610 224 11

Additional extensions

611 087

611 089



Technical information:

Usage:
For indoor switchgear ≤ 12 kV, with threaded connection to ARCUSDETECT M

Standard: IEC 61243-1

Material:
Contact tip: Copper alloy (tin-plated)
Insulation (red): Polyolefin

Type overview			
D [mm]	**L [mm]**	**effective length [mm]**	**Type number**
6	185	145	611 089
13,5	353	313	611 087

Wall Holders

For storage of high voltage detectors, operating rods, and earthing rods.

Easy and fast installation.

Wall holders are made of very strong plastic material.

Type number 611 066

For insulating rods
with tube diameter Ø 20-30 mm

Type number 611 067

For insulating rods
with tube diameter Ø 30-40 mm

Type number 611 068

For insulating rods
with tube diameter Ø 40-50 mm

615 106

Carrying case for high voltage detectors

Basic version:

- Shell of plastic material

Outside dimensions			Type number
W [mm]	H [mm]	T [mm]	
100	230	950	615 106
100	230	1200	615 107
120	320	1300	615 108

615 092

Tubular bags

Design:

- Polyester, royal blue
- 2x belt strap black
- 1 shoulder strap
- Lid with zipper
- Transparent pocket inside for instruction for use

Dimensions [mm]	Type number
Ø 150x820 long	615 092
Ø 150x1020 long	615 096
Ø 150x1100 long	615 041
Ø 150x1220 long	615 095
Ø 150x1320 long	615 097
Ø 150x1420 long	615 093
Ø 150x1520 long	615 103
Ø 150x1620 long	615 102
Ø 150x1720 long	615 100

615 065

Tubular bag for ARCUSDISTANT III

Design:

- Polyester, royal blue
- 1 shoulder strap
- with zipper

610 023 26

Bag

Design:

- Tarpaulin, royal blue
- 2x belt strap black
- With belt closure
- Transparent pocket inside for instruction for use
- Suitable for 2-part high voltage detectors

W [mm]	L [mm]	Pockets	Type number
410	2480	2	610 023 26

List of Voltage Detectors and Allocation of Accessories

Type Number	Type	Un [kV]	f [Hz]	Net System	Indoor Use	Outdoor Use	Usage	n-parts	Transport Length	Page
610 001 015	ARCUSDISTANT III	110	16,7	—		x	Overhead Line	2	750	27
610 221	ARCUSDETECT M	10	50	Y	x		Overhead Line/Substation	2	700	20
610 222	ARCUSDETECT M	20	50	Y	x		Overhead Line/Substation	2	740	20
610 223	ARCUSDETECT M	30	50	Y	x		Overhead Line/Substation	2	920	20
610 226	ARCUSDETECT M	10	50	Y		x	Overhead Line/Substation	2	700	21
610 227	ARCUSDETECT M	20	50	Y		x	Overhead Line/Substation	2	740	21
610 228	ARCUSDETECT M	30	50	Y		x	Overhead Line/Substation	2	920	21
610 234	ARCUSDETECT M	10-20	50	Y	x		Overhead Line/Substation	2	980	20
610 235	ARCUSDETECT M	20-30	50	Y	x		Overhead Line/Substation	2	980	20
610 236	ARCUSDETECT M	10-20	50	Y		x	Overhead Line/Substation	2	980	21
610 237	ARCUSDETECT M	20-30	50	Y		x	Overhead Line/Substation	2	980	21
610 240	ARCUSDETECT M	15	16.7	I		x	Railway Energy Line	2	920	23
610 241	ARCUSDETECT M	15	16.7	I		x	Contact Wire	2	2400	24
610 250	ARCUSDISTANT III	110-380	50	Y		x	Overhead Line	2	750	27
610 326	ARCUSDETECT H	110	16.7	—		x	Traction Current Line	3	1500	26
610 327	ARCUSDETECT H	33+66	16.7	I + —		x	Traction Current Line	3	1000	26
610 328	ARCUSDETECT H	66	16.7	—		x	Traction Current Line	3	1000	26
610 329	ARCUSDETECT H	66-132	16.7	—		x	Traction Current Line	4	1600	26
610 330	ARCUSDETECT H	15	16.7	I		x	Contact Wire	6	1020	25
640 001	ARCUSDETECT H	60-110	50	Y		x	Overhead Line/Substation	3	1000	25
640 002	ARCUSDETECT H	110	50	Y		x	Overhead Line/Substation	3	1500	25
640 003	ARCUSDETECT H	110-220	50	Y		x	Overhead Line/Substation	3	1600	25
640 004	ARCUSDETECT H	220	50	Y		x	Overhead Line/Substation	3	1600	25
640 005	ARCUSDETECT H	380	50	Y		x	Overhead Line/Substation	4	1600	25
640 006	ARCUSDETECT H	380-420	50	Y		x	Overhead Line/Substation	4	1600	25
697 006	ARCUSDETECT M	5-10	50	Y	x		Overhead Line/Substation	2	740	20
697 007	ARCUSDETECT M	5-10	50	Y		x	Overhead Line/Substation	2	740	21
697 010	ARCUSDETECT M	10.5-15	16.7	I		x	Railway Energy Line/Substation	2	1000	22
697 012	ARCUSDETECT M	10-30	50	Y		x	Overhead Line/Substation	2	1160	21
697 013	ARCUSDETECT M	15	16.7	I		x	Railway Energy Line/Substation	2	740	22
697 035	ARCUSDETECT M	11-33	50	Y		x	Overhead Line/Substation	2	1160	21
697 044	ARCUSDETECT M	6	50	Y	x		Overhead Line/Substation	2	700	20
697 050	ARCUSDETECT H	132	16.7	—		x	Traction Current Line	3	1600	26
697 063	ARCUSDETECT M	33	16.7	I		x	Railway Energy Line/Substation	2	920	22
697 064	ARCUSDETECT H	150	50	Y		x	Overhead Line/Substation	3	1600	25
697 076	ARCUSDETECT M	15-33	16.7	I		x	Railway Energy Line/Substation	2	1160	22

— effectively centre-isolated neutral 1-phase system

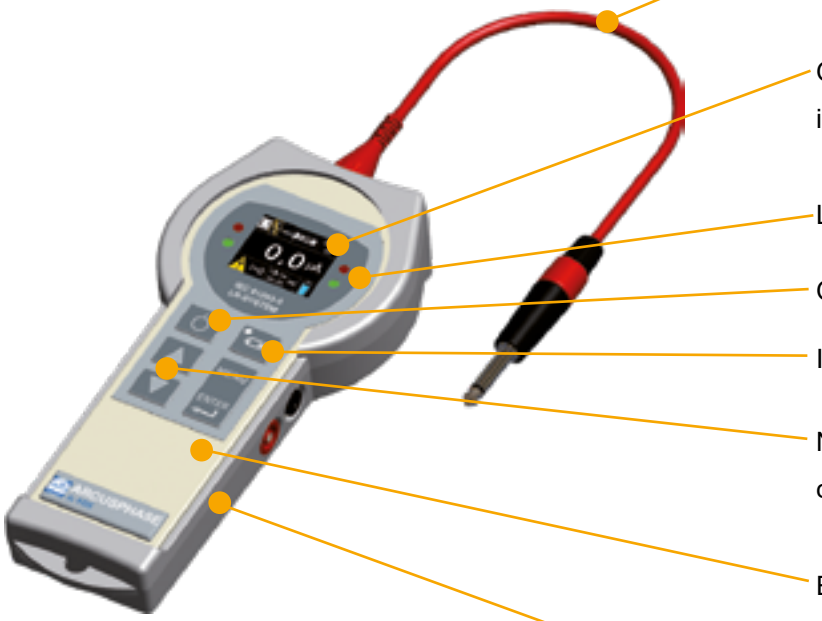
I effectively singe-side isolated neutral 1-phase system

Y effectively star point isolated neutral 3-phase system

List of Voltage Detectors and Allocation of Accessories

Type Number	Carrying Bag page 33	Carrying Case page 32	Handle Extensions page 28	Extensions for Contact Electrode page 29	Fork Contact for Overhead Lines page 30	Additional Extensions page 30
610 001 015	615 065	---	---	---	---	---
610 221	615 092	615 106	611 078,611 079,611 080,611 081,611 086,611 090	611 069,611 070	---	611 087,611 089
610 222	615 092	615 106	611 078,611 079,611 080,611 081,611 086,611 090	611 069,611 070	---	---
610 223	615 096	615 107	611 078,611 079,611 080,611 081,611 086,611 090	611 069,611 070	610 224 14	---
610 226	615 092	615 106	611 078,611 079,611 080,611 081,611 086,611 090	611 072,611 073	---	---
610 227	615 092	615 106	611 078,611 079,611 080,611 081,611 086,611 090	611 072,611 073	---	---
610 228	615 096	615 107	611 078,611 079,611 080,611 081,611 086,611 090	611 072,611 073	610 224 14	---
610 234	615 096	615 107	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---
610 235	615 096	615 107	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---
610 236	615 096	615 107	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---
610 237	615 096	615 107	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---
610 240	615 096	615 107	---	611 072,611 073	included	---
610 241	610 023 26	---	---	---	---	---
610 250	615 065	---	---	---	---	---
610 326	615 103	---	611 075,611 076,611 077	---	included	---
610 327	615 096	---	611 075,611 076,611 077	---	included	---
610 328	615 096	---	611 075,611 076,611 077	---	included	---
610 329	615 102	---	611 082,611 083,611 084	---	included	---
610 330	615 096	---	---	---	---	---
640 001	615 096	---	611 075,611 076,611 077	---	included	---
640 002	615 103	---	611 075,611 076,611 077	---	included	---
640 003	615 102	---	611 075,611 076,611 077	---	included	---
640 004	615 102	---	611 075,611 076,611 077	---	included	---
640 005	615 102	---	611 082,611 083,611 084	---	included	---
640 006	615 102	---	611 082,611 083,611 084	---	included	---
697 006	615 092	615 106	611 078,611 079,611 080,611 081,611 086,611 090	---	---	611 087,611 089
697 007	615 092	615 106	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---
697 010	615 096	615 107	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---
697 012	615 095	615 107	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---
697 013	615 092	615 106	611 078,611 079,611 080,611 081,611 086,611 090	611 072,611 073	---	---
697 035	615 095	615 107	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---
697 044	615 092	615 106	611 078,611 079,611 080,611 081,611 086,611 090	611 069,611 070	---	611 087,611 089
697 050	615 102	---	611 075,611 076,611 077	---	included	---
697 063	615 096	615 107	611 078,611 079,611 080,611 081,611 086,611 090	611 072,611 073	610 224 14	---
697 064	615 102	---	611 075,611 076,611 077	---	included	---
697 076	615 095	615 107	611 078,611 079,611 080,611 081,611 086,611 090	---	---	---

According to IEC 61243-5



Safety measuring line
with plug for LR-system

OLED colour display
indication of measurement values

LED-signalisation

ON/OFF-button

Indication of battery status

Navigation button
clear and simple menu navigation

Ergonomic housing to IP54
suitable for indoor and outdoor use

Exchangeable protector
for rough usage conditions

Product highlights:

- 1-polar voltage detector VDS[1]; tested to IEC 61243-5
- Suitable for rated voltages up to 52 kV / 50 Hz
- Exact and reliable detection of voltage and frequency
- Test of interface by measurement of real effective value of interface current
- Integrated self-testing device
- Digital oscilloscope
- Real-time FFT-analysis
- OLED colour display with additional LED-signallisation
- Date and Time
- Language selection (German/English)
- Model with batteries or recharger set for rechargeable batteries
- Ergonomic housing to IP54 suitable for indoor and outdoor use
- Exchangeable protector for rough usage conditions
- Spare parts and accessories → page 42
- RoHS-compliant
- CE-compliant

1) VDS = Voltage Detecting System

Precise current measurement

Precise frequency measurement

Digital oscilloscope

Real-time FFT-analysis

Technical data:	
Standard:	IEC 61243-5
Nominal frequency:	50 Hz
Threshold value:	4.5 V at 2.0 MOhm
Environmental temperature:	-20 °C up to +60 °C
Protection class:	IP 54
Usage:	Indoor and outdoor
OLED colour display:	yes
Indication of battery status:	yes
Model with batteries:	3x Alkali Mangan size LR6 or AA or 3x Lithium size FR6 or AA
Model with recharger set for rechargeable batteries:	3 x NiMH-rechargeable batteries size LR6 or AA
Length of measuring lines:	2 m
Connection of measuring line:	LR-System (Adaptor for HR, LRP, LRM → page 42)
Dimensions:	210 x 95 x 40 mm
Weight:	300 g (without measuring lines)

According to IEC 61243-5

Safety measuring line
with plug for LR-system

OLED colour display
indication of measurement values

LED-signalisation

Indication of battery status

ON/OFF-button

Navigation button
clear and simple menu navigation

Ergonomic housing to IP54
suitable for indoor and outdoor use

Exchangeable protector
for rough usage conditions

Product highlights:

- 2-polar voltage detector VDS[1)] and phase comparator UPC[2)]; tested to IEC 61243-5
- Suitable for rated voltages up to 52 kV / 50 Hz
- Exact and reliable detection of voltage and frequency
- Measurement of phase angle with a basic accuracy of 0.5 ° and with phase rotation indicator
- Test of interface by measurement of real effective value of interface current
- Integrated self-testing device
- OLED colour display with additional LED-signallisation
- Automatic or manual selection of measuring functions
- Date and Time
- Language selection (German/English)
- Model with batteries or recharger set for rechargeable batteries
- Ergonomic housing to IP54 suitable for indoor and outdoor use
- Exchangeable protector for rough usage conditions
- Spare parts and accessories → page 42
- RoHS-compliant
- CE-compliant

1) VDS = Voltage Detecting System 2) UPC (Universal Phase Comparator)

Simple menu navigation

Precise current measurement

Precise frequency measurement

Precise phase angle measurement
with phase rotation indicator

Technical data:	
Standard:	IEC 61243-5
Nominal frequency:	50 Hz
Threshold value:	4.5 V at 2.0 MOhm
Environmental temperature:	-20 °C up to +60 °C
Protection class:	IP 54
Usage:	Indoor and outdoor
Phase balance:	Phase angle: -20 ° up to +20 °
OLED colour display:	yes
Indication of battery status:	yes
Model with batteries:	3x Alkali Mangan size LR6 or AA or 3x Lithium size FR6 or AA
Model with recharger set for rechargeable batteries:	3x NiMH-rechargeable batteries size LR6 or AA
Length of measuring lines:	2 m
Connection of measuring line:	LR-System (Adaptor for HR, LRP, LRM → page 42)
Dimensions:	210 x 95 x 40 mm
Weight:	300 g (without measuring lines)

ARCUSPHASE DSP 1x VDS

Set with case Type number 610 413

with batteries

- 1x ARCUSPHASE DSP 1x VDS
- 1x Measuring line red, for LR-system, 2 m long
- 1x HR-LR adaptor for HR-system
- 1x LRM-LR adaptor for LRM-system, earth and phase line
- 1x LRP-LR adaptor with plug 4mm and with earth line
- 1x Instruction for use for ARCUSPHASE DSP
- 1x Instruction for use for HR-LR adaptor
- 1x Instruction for use fo LRM-LR adaptor
- 1x Instruction for use fo LRP-LR adaptor
- 1 x Plastic case

ARCUSPHASE DSP 2x VDS & UPC

Set with case Type number 610 410

with batteries

- 1x ARCUSPHASE DSP 2x VDS & UPC
- 1x Measuring line black, for LR-system, 2 m long
- 1x Measuring line red, for LR-system, 2 m long
- 2x HR-LR adaptor for HR-system
- 1x Instruction for use for ARCUSPHASE DSP
- 1x Instruction for use for HR-LR adaptor
- 1 x Plastic case

ARCUSPHASE DSP 2x VDS & UPC

Set with bag Type number 610 400

with batteries

- 1x ARCUSPHASE DSP 2x VDS & UPC
- 1x Measuring line black, for LR-system, 2 m long
- 1x Measuring line red, for LR-system, 2 m long
- 2x HR-LR adaptor for HR-system
- 1x Instruction for use for ARCUSPHASE DSP
- 1x Instruction for use for HR-LR adaptor
- 1x Carrying bag

LRM-LR adaptor
for LRM-system
earth and phase line
Type number 610 406

LRM-LR adaptor
for LRM-system
phase line only
Type number 610 409

LRM-LR adaptor set
for LRM-system
1x Type number 610 406
1x Type number 610 409
Type number 610 411

LRP-LR adaptor
for LRP-system
with plug 6 mm
and with earth line
Type number 610 405
with plug 4 mm
and with earth line
Type number 610 408

LRP-LR adaptor
for LRP-system
with plug 6 mm
Type number 610 404
with plug 4 mm
Type number 610 407

HR-LR adaptor
for HR-system
Type number 610 401

Measuring line red
for LR-system, 2 m long
Type number 610 400 05

Measuring line black
for LR-system, 2 m long
Type number 610 400 06

Recharger set for rechargeable batteries
incl. recharger, power supply unit, car adaptor (12 V), instruction for use, excl. rechargeable batteries
Type number 071 8928

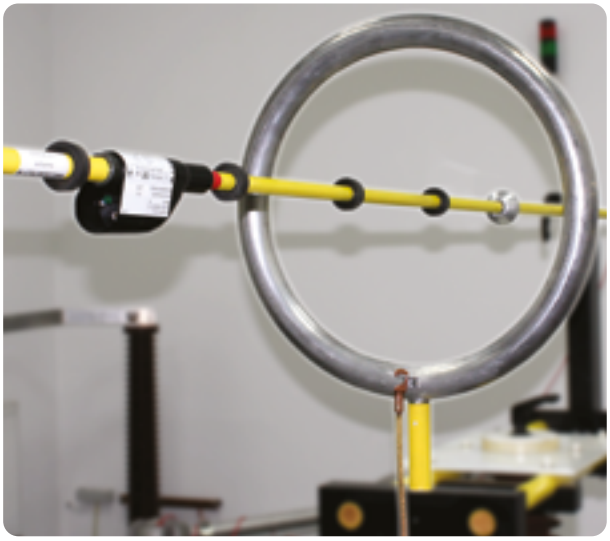
Plastic case
Outer dimensions [WxHxD]:
395 x 295 x 106 mm
Type number 615 101

Carrying bag
Outer dimensions [WxHxD]:
250 x 130 x 80 mm
Type number 615 098

Protector
Material: Lifoflex ®
Type number 610 400 03

Periodic testing

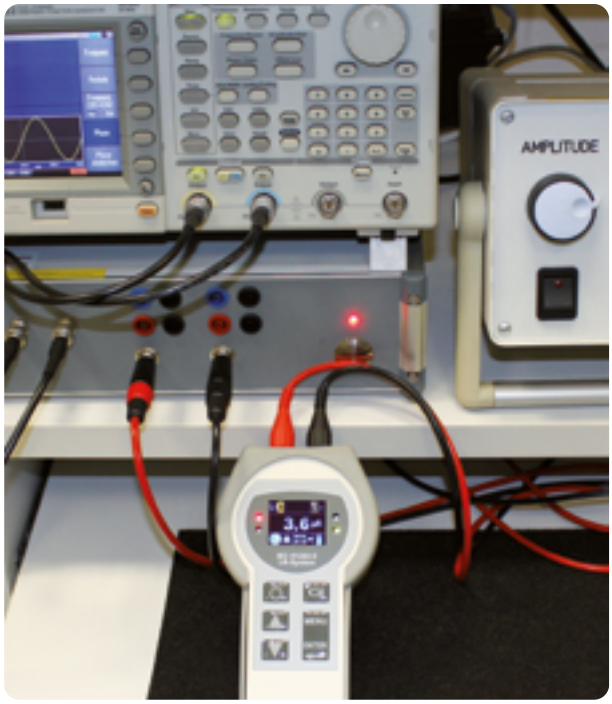
To insure good functioning of your voltage detectors and voltage detecting systems, and at the same time your own safety and the one of your colleagues, according to product standards periodic tests have to be carried out in regular intervals.



As manufacturer of voltage detectors and voltage detecting systems we perform fast and economic periodic testing on your detectors.

Following work is included in our periodic testing:

- Electric and mechanic tests according to product standards
- Cleaning of detectors
- Add correct instruction for use
- Test protocol for each detector
- Each detector is provided with a sticker showing the date for the next periodic testing
- Return of detectors
- Filing of test results for the complete product life time in our company



Repair

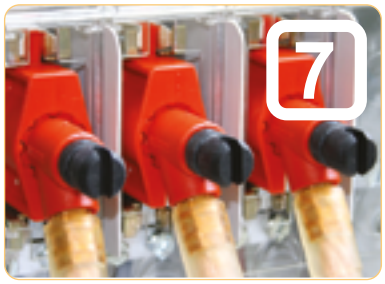
Your detector shows defects?

Our technicians will repair damages on faulty detectors:

- With competence,
- reliability,
- and at fair prices!

Catalogues from our Product Range “Safety Equipment”

Capacitive Voltage Detectors and Voltage Detection Systems



Fully-Insulated and Part-Insulated Earthing and Short Circuiting Devices for Low Voltage Applications

Safety Equipment for Railway Systems

Stationary and Portable Earthing Lances

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