HIOKI

PHASE DETECTOR
VOLTAGE DETECTOR Series

PHASE · VOLTAGE DETECTORS

DIGITAL PHASE DETECTOR PD3259-50

Product warranty for 3 years
Accuracy guaranteed for 1 year

Without metal contact


Hands free Z5020 (Option)


WIRELESS ADAPTER Z3210 (Option)

Attach to enable Bluetooth® wireless technology

With Z3210

Bluetooth®

Please see www.hioki.com for list of supported regions.

GENNECT Cross

Model PD3259-90 includes Z3210 as a set

Order code **PD3259-50**

Order code **PD3259-90**

Order code **Z3210**

CAT IV 600 V

Soil, residue, or moisture on the insulated wires may result in lower voltage and power values than their true values. Use a dry cloth to remove before measuring.

Measurement parameters	Detection functions	Phase detection, open phase, prediction of ground phase (Three-phase line)
	Three-phase AC voltage (line-to-line voltage and voltage to ground)	90.0 V to 520.0 V AC (Three-phase line) accuracy: ±2.0% rdg ±8 dgt
	Frequency	45 Hz to 66 Hz Accuracy: ±0.5% rdg ±1 dgt
	Measurement targets	Covered cables, metal portions*1 Finished outer diameter 6 to 30 mm (0.24 to 1.18 in)
Other	Operating temperature	-25°C to 65°C, 80% RH or less (non-condensating)
	Storage temperature	-25°C to 65°C, 80% RH or less (non-condensating)
	Dustproof and waterproof	IP54 (device body only)
	Standards	EN61010 (Safety), EN61326 Class A (EMC)
	Power supply Continuous operating time	LR6 alkaline battery ×4 5 hours (Without Z3210)
	Dimensions (W × H × D)	84 × 146 × 46 mm (3.31 × 5.75 × 1.81 in) Cable length 50 cm (1.64 ft)
	Weight	590 g (20.8 oz)

*1 **Shielded cables not supported**

Accessories

- CARRYING CASE C0203
  Dimensions:
  W135 mm (5.31 in) × H265 mm (10.43 in) × D65 mm (2.56 in)
- LR6 alkaline battery ×4
- Color clips (White ×2, red ×2, blue ×2, yellow ×2)
- Spiral tubes (black ×1)
- Instruction manual

Options

- MAGNETIC STRAP Z5020


C0203

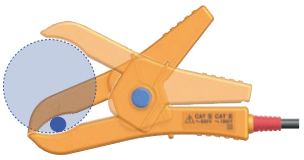

Color clip


Z5020

PHASE DETECTOR PD3129, PD3129-10

Product warranty for 3 years
Accuracy guaranteed for 1 year


ϕ2.4 mm (0.09 in) to ϕ17 mm (0.67 in)
PD3129: Thin Conductors


ϕ7 mm (0.28 in) to ϕ40 mm (1.57 in)
PD3129-10: Thick Conductors

PD3129 **CAT IV 600 V**

PD3129-10 **CAT IV 600 V, CAT III 1000 V**

Measurement parameters	Detection functions		Phase detection (positive and negative)
	Voltage range	PD3129	70 to 600 V AC (continuous sine wave)
		PD3129-10	70 to 1000 V AC (continuous sine wave)
	Frequency range		45 Hz to 66 Hz
	Measurement targets	PD3129	2.4 mm (0.09 in) to 17 mm (0.67 in) of insulated wiring
		PD3129-10	7 mm (0.28 in) to 40 mm (1.57 in) of insulated wiring
	Phase-detection indication	Positive	4 LEDs lit in clockwise order and the buzzer sounds intermittently, green arrow lights up
		Negative	4 LEDs lit in counterclockwise order and the buzzer sounds continuously
	Functions		Live line check, Battery check function
Other	Operating temperature		0°C to 40°C, 80% RH or less (non-condensating)
	Storage temperature		-20°C to 60°C, 80% RH or less (non-condensating)
	Standards		EN61010 (Safety), EN61326 (EMC)
	Power supply Continuous operating time		LR6 alkaline battery x 2 200 hours
	Dimensions(W × H × D)		70 × 75 × 30 mm (2.76 × 2.95 × 1.18 in) Cable length 70 cm (2.30 ft)
	Weight		PD3129: 200 g (7.1 oz), PD3129-10: 240 g (8.5 oz)

Accessories

- CARRYING CASE
- Strap
- LR6 alkaline battery x 2
- Spiral tube
- Instruction manual

Order code **PD3129**

Order code **PD3129-10**

VOLTAGE DETECTOR 3481-20

Product warranty for 3 years
Accuracy guaranteed for 1 year


with LED light


Red for voltage detection

CAT IV 600 V

Measurement parameters	Operating voltage range	40 to 600 V AC (50Hz/60Hz)
	Maximum sensitivity variable range	40 to 80 V AC (50Hz/60Hz)
	Pilot light	Red LED lights up and the buzzer sounds when the wire is live
Other	Operating temperature	0°C to 40°C, 80% RH or less (non-condensating)
	Storage temperature	-20°C to 60°C, 80% RH or less (non-condensating)
	Standards	EN61010 (Safety), EN61326 (EMC)
	Power supply Continuous operating time	LR44 button alkaline battery × 3 5 hours
	Dimensions (W × H × D)	20 × 126 × 15 mm (0.79 × 4.96 × 0.59 in)
	Weight	30 g (1.1 oz)

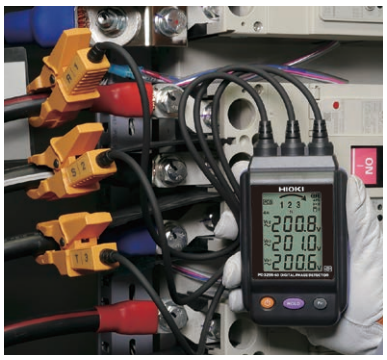
Accessories

- LR44 button alkaline battery ×3
- Instruction manual

Order code **3481-20**

Function introduction DIGITAL PHASE DETECTOR PD3259-50

covered cables, and your 3-phase power line inspection is complete.



Positive phase sequence display

1 phase sequence

2 Missing phase prediction

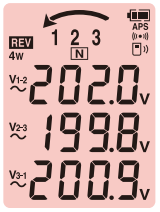
If the instrument predicts that one wire of the 3-phase circuit is missing, the icon for the phase predicted to be missing will not be displayed.

3 Ground phase prediction

If the " 1 " phase is grounded, the display will indicate "N" underneath " 1 " .

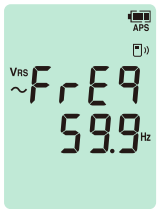
4 3-phase line voltage measurement

5 Frequency measurement



Negative phase sequence display

- Red backlight
- with continuous tone



Measuring Frequency

Using Bluetooth® communication with the Z3210

WIRELESS ADAPTER Z3210 (Option)

Attach to enable Bluetooth® wireless technology

Transport to the Excel® file

Open an Excel® file and select a cell. The measured value being held on the instrument's display will be transferred to the computer and entered into the selected cell.

Learn more Z3210

Transport to GENNECT Cross

PDF Reports
CSV Measurement data
JPG Image data

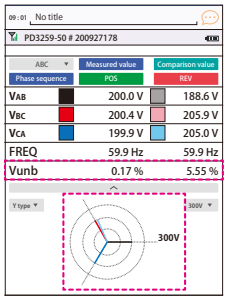
GENNECT Cross, a free app designed specifically for use with Hioki measuring instruments, lets you check and manage measurement results and create reports. The software provides a range of functionality that helps manage data in the field, including photographing measurement sites, placing measurement results on photographs, and saving hand written memos.

Learn more GENNECT Cross

New function in GENNECT Cross

You can check the

unbalance rate **vector diagram**



Function introduction PHASE DETECTOR PD3129, PD3129-10

No-metal-contact design for the ultimate in safety, Easy-to-read arrow indicator.

Arrow: Green LED
Buzzer: Intermittent sound

Positive phase sequence display

Negative phase sequence display

- Arrow: Not lit up
- Buzzer: Continuous sound

Magnets for a more efficient workflow

200 hours of use with two AA batteries, Battery check function, Auto power off

Function introduction VOLTAGE DETECTOR 3480, 3481

Non-contact voltage detector lets you verify the hot-line state of AC voltage through the wire or cable covering.

No need for lights (3481 Only)

Sensitivity adjustment function

Compact design that fits in a pocket

Handy clip with gap for strap.

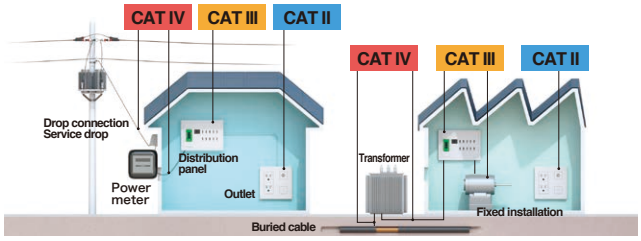
CAT	**Safety standard categories**
	Drop proof Robust design capable of withstanding a drop from a height of 1 m onto concrete
	Backlight

AUTO OFF	**Auto power OFF** Automatically turns off after a certain time
DISPLAY HOLD	**Display hold**
TRUE RMS	**True RMS** True RMS measurement for accurate measurement of even distorted current waveforms

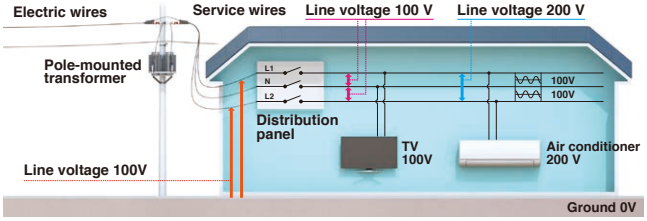
Measurement Category · Anticipated Transient Overvoltage

Under safety standards (EN61010 Series, JIS C 1010 Series), measurement is classified into Categories II to IV according to the measurement point's rated voltage to ground, current capacity (size of current that flows in a short-circuit fault), etc., and the transient overvoltage that occurs at the measurement point.

Measurement Category



Rated voltage to ground



CAT II :	Measurement at a point from the power plug to the equipment's power circuits, where equipment is directly connected to an outlet.
CAT III :	Measurement at a point on the power distribution cabling or power supply circuits, or at a point from the distribution panel to a distribution terminal behind an outlet, where equipment (for example a fixed installation) takes electricity directly from a distribution panel.
CAT IV :	Measurement at a point on a service drop to a building, or on the line from the drop connection to the power meter or distribution panel.

Anticipated Transient Overvoltage

Rated voltage to ground	Transient overvoltage		
	CAT II	CAT III	CAT IV
300 V	2500 V	4000 V	6000 V
600 V	4000 V	6000 V	8000 V
1000 V	6000 V	8000 V	12000 V

Power lines in factories and similar facilities will at times include transient overvoltage (impulse voltage) that is around 10 times the power source voltage.
The transient overvoltage of the measurement points must be predicted in advance, and the instrument will need a safety design that will enable it to withstand such overvoltage.

Marks

CAT IV Measurement Category
600V Rated voltage to ground

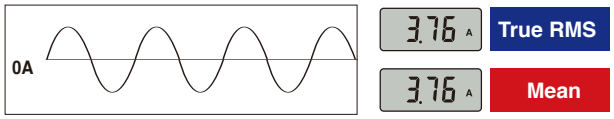
Assuming 600 V for the measurement point's voltage to ground, a Category IV location could potentially include transient overvoltage of 8000 V. Hence, CAT IV measurement instruments are designed to withstand transient overvoltage of 8000 V. CAT III measurement instruments can only withstand up to 6000 V, so if 8000 V transient overvoltage enters, it will cause insulation breakdown that could result in electric shock.

Never measure a measurement point with a higher category number than the category indicated on the measuring instrument. Doing so could lead to a serious accident such as electric shock.

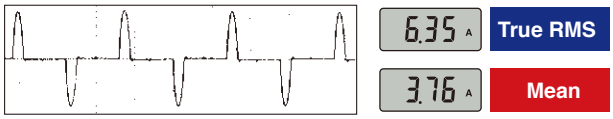
Rectification Methods: True RMS and Mean

A measuring instrument uses one of two rectification methods, “True RMS" or “Mean”. Using mean rectification assumes that the signal is based on a sine wave without distortions in order to calculate the value. Distorted waveforms cannot be measured accurately using this method. As the performance of equipment increases, so do distorted waveforms. In order to accurately measure in these situations, using the True RMS method is necessary.

Non-distorted current waveforms



Waveforms distort due to switching power supplies and similar technologies



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All information correct as of Feb. 3, 2025. All specifications are subject to change without notice.
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