



1. TECHNICAL SPECIFICATIONS

Accuracy is calculated as: $\pm[\% \text{reading} + (\text{no. of digits}) * \text{resolution}]$ at 23°C, <80%RH

AC TRMS VOLTAGE

Range (V)	Resolution (V)	Accuracy
15 ÷ 460	1	$\pm(3.0\% \text{ rdg} + 2\text{dgt})$

FREQUENCY

Range (Hz)	Resolution (Hz)	Accuracy
47.50 ÷ 52.50 / 57.00 ÷ 63.00	1	$\pm(0.1\% \text{ rdg} + 1\text{dgt})$

CONTINUITY OF PROTECTION CONDUCTORS WITH 200mA

Range (Ω)	Resolution (Ω)	Accuracy
0.00 ÷ 9.99	0.01	$\pm(5.0\% \text{ rdg} + 3\text{dgt})$
10.0 ÷ 99.9	0.1	
100 ÷ 1999	1	

Test current: >200mA DC up to 5 Ω (test leads included)
 Test current generated: 1mA resolution, range 0 ÷ 250mA
 Open-circuit voltage: 4 < V_o < 24VDC
 Safety protection: error message for input voltage >10V

INSULATION RESISTANCE

DC test voltage (V)	Range (M Ω)	Resolution (M Ω)	Accuracy
50	0.01 ÷ 9.99	0.01	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$
	10.0 ÷ 49.9	0.1	$\pm(5.0\% \text{ rdg} + 2\text{dgt})$
	50.0 ÷ 99.9		
100	0.01 ÷ 9.99	0.01	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$
	10.0 ÷ 99.9	0.1	$\pm(5.0\% \text{ rdg} + 2\text{dgt})$
	100 ÷ 199	1	
250	0.01 ÷ 9.99	0.01	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$
	10.0 ÷ 99.9	0.1	$\pm(5.0\% \text{ rdg} + 2\text{dgt})$
	100 ÷ 249		
500	0.01 ÷ 9.99	0.01	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$
	10.0 ÷ 199.9	0.1	$\pm(5.0\% \text{ rdg} + 2\text{dgt})$
	200 ÷ 499		
1000	0.01 ÷ 9.99	0.01	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$
	10.0 ÷ 199.9	0.1	$\pm(5.0\% \text{ rdg} + 2\text{dgt})$
	200 ÷ 999		
	1000 ÷ 1999	1	$\pm(5.0\% \text{ rdg} + 2\text{dgt})$

Open-circuit voltage: rated test voltage -0% +10%
 Rated measuring current: >1mA with 1k Ω x V_{nom} (50V, 100V, 250V, 1000V), >2.2mA with 230k Ω @ 500V
 Short-circuit current: <6.0mA for each test voltage
 Safety protection: error message for input voltage >30V

LINE/LOOP IMPEDANCE P-P, P-N, P-PE – TT/TN SYSTEMS

Range (Ω)	Resolution (Ω) (*)	Accuracy
0.01 ÷ 19.99	0.01	$\pm(5.0\% \text{ rdg} + 3\text{dgt})$
20.0 ÷ 199.9	0.1	

(*) 0.1m Ω in range 0.1 ÷ 199.9 m Ω (by using the optional accessory IMP57)

Maximum test current: 3.31A (at 265V); 5.71A (at 457V)
 P-N/P-P Test voltage: (100V ÷ 265V) / (100V ÷ 460V); 50/60Hz \pm 5%
 Protection types: MCB (B, C, D, K), Fuse (aM, gG, BS882-2, BS88-3, BS3036, BS1362)

TEST ON RCD PROTECTION (MOLDED-CASE TYPE)

Differential protection type (RCD):	AC(✓), A/F(✓), B/B+(✓), CCID (✓, - USA country), General (G), Selective (S)
Single -phase systems (L-N-PE)	
Voltage range L-PE, L-N:	100V ÷265V RCD type AC, A/F, B/B+ and CCID ($I_{\Delta N} \leq 100\text{mA}$) 190V ÷265V RCD type B/B+ ($I_{\Delta N} = 300\text{mA}$)
Voltage range N-PE:	<10V
Split-phase systems (phase delay VL1-PE, VL2-PE = 180° or phase delay VL1-PE, VL2-PE = 120°)	
Voltage range L1-PE, L1-L2:	100V ÷265V RCD type AC, A/F, B/B+ and CCID ($I_{\Delta N} \leq 100\text{mA}$)
Voltage range L2-PE:	0V ÷265V RCD type AC, A/F 0V ÷ min[(VL1-PE-100V) and (VL1-L2-100V)], RCD type B/B+ ($I_{\Delta N} \leq 100\text{mA}$)
Rated tripping currents ($I_{\Delta N}$):	5mA, 6mA, 10mA, 20mA, 30mA, 100mA, 300mA, 500mA, 650mA, 1000mA
Frequency:	50/60Hz ± 5%

RCD tripping current (for General RCDs only)

Type RCD	$I_{\Delta N}$	Range $I_{\Delta N}$ (mA)	Resolution (mA)	Accuracy
CCID	5mA, 20mA	$(0.2 \div 1.3) I_{\Delta N}$	0.1 $I_{\Delta N}$	- 0%, +10% $I_{\Delta N}$
AC, A/F, B/B+	6mA, 10mA	$(0.2 \div 1.1) I_{\Delta N}$		- 0%, +5% $I_{\Delta N}$
AC, A/F, B/B+	$30\text{mA} \leq I_{\Delta N} \leq 300\text{mA}$			
AC, A/F	$500\text{mA} \leq I_{\Delta N} \leq 650\text{mA}$			

Measurement RCD tripping time – TT/TN systems

	x 1/2		x 1		x 5		AUTO		AUTO+		
	G	S	G	S	G	S	G	S	G	S	
5mA	AC										
	A/F										
	B/B+										
	CCID		999						310		
6mA	AC	999	999	999	999	50	150	✓	✓	310	✓
	A/F	999	999	999	999	50	150	✓	✓	310	✓
	B/B+	999	999	999	999					310	
	CCID										
10mA	AC	999	999	999	999	50	150	✓	✓	310	✓
	A/F	999	999	999	999	50	150	✓	✓	310	✓
	B/B+	999	999	999	999					310	
	CCID										
20mA	AC										
	A/F										
	B/B+										
	CCID			999						310	
30mA	AC	999	999	999	999	50	150	✓	✓	310	✓
	A/F	999	999	999	999	50	150	✓	✓	310	✓
	B/B+	999	999	999	999					310	
	CCID										
100mA	AC	999	999	999	999	50	150	✓	✓	310	
	A/F	999	999	999	999	50	150	✓	✓	310	
	B/B+	999	999	999	999					310	
	CCID										
300mA	AC	999	999	999	999	50	150	✓	✓	310	
	A/F	999	999	999	999	50	150	✓	✓	310	
	B/B+	999	999	999	999					310	
	CCID										
500mA	AC	999	999	999	999	50	150	✓	✓	310	
650mA	A/F	999	999	999	999					310	
	B/B+										
	CCID										
1000mA	AC	999	999	999							
	A/F	999	999	999							
	B/B+										
	CCID										

Table with duration of tripping time measurement [ms] - Resolution: 1ms, Accuracy: ±(2.0%reading + 2digits)

Measurement RCD tripping time – IT systems

	\	x 1/2		x 1		x 5		AUTO		AUTO+	
		G	S	G	S	G	S	G	S	G	S
6mA 10mA 30mA	AC	999	999	999	999	50	150	✓	✓	310	✓
	A/F	999	999	999	999	50	150	✓	✓	310	✓
	B/B+	999	999	999	999					310	
100mA 300mA	AC	999	999	999	999	50	150	✓	✓	310	
	A/F	999	999	999	999	50	150	✓	✓	310	
	B/B+	999	999	999	999					310	
500mA 650mA	AC	999	999	999	999	50	150	✓		310	
	A/F	999	999	999	999			✓		310	
	B/B+										
1000mA	AC	999	999	999	999						
	A/F	999	999	999	999						
	B/B+										

 Table with duration of tripping time measurement [ms] - Resolution: 1ms, Accuracy: $\pm(2.0\% \text{reading} + 2 \text{digits})$

TEST ON RCD TYPE DD PROTECTION

Differential protection type (RCD):

DD type (compliance with IEC62955 guideline), General (G)

Single -phase systems (L-N-PE)

Voltage range L-PE, L-N:

 100V \pm 265V

Voltage range N-PE:

<10V

Split-phase systems (phase delay VL1-PE, VL2-PE = 180° or phase delay VL1-PE, VL2-PE = 120°)

Voltage range L1-PE, L1-L2:

 100V \pm 265V

Voltage range L2-PE:

 0V \div min[(VL1-PE-100V) and (VL1-L2-100V)]

 Rated tripping currents (I Δ N):

6Ma

Frequency:

 50/60Hz \pm 5%

Tripping current – (RCD DD type General)

RCD type	I Δ N	Range (mA)	Resolution (mA)	Accuracy
DD	6mA	(0.2 \div 1.1) I Δ N	$\leq 0.1 I_{\Delta N}$	- 0%, +10% I Δ N

Tripping time – (RCD DD type General)

RCD type	I Δ N	Range (ms)	Resolution (ms)	Accuracy
DD	6mA	10000	1	$\pm(2.0\% \text{rdg} + 2 \text{dgt})$

FIRST FAULT CURRENT – IT SYSTEMS

Range (mA)	Resolution (mA)	Accuracy
0.1 \div 0.9	0.1	$\pm(5.0\% \text{rdg} + 1 \text{dgt})$
1 \div 999	1	$\pm(5.0\% \text{rdg} + 3 \text{dgt})$

Limit contact voltage (ULIM) : 25V, 50V

OVERALL EARTH RESISTANCE WITHOUT RCD TRIPPING

Voltage range P-PE, P-N:

 100V \div 265V

Voltage range N-PE:

<10V

Frequency:

 50/60Hz \pm 5%

Overall earth resistance in systems with Neutral (3-wire) – (30mA or higher RCD)

Range (Ω)	Resolution (Ω)	Accuracy
0.05 \div 9.99	0.01	$\pm (5.0\% \text{rdg} + 8 \text{dgt})$
10.0 \div 199.9	0.1	

Overall earth resistance in systems with Neutral (3-wire) – (6mA and 10mA RCD)

Range (Ω)	Resolution (Ω)	Accuracy
0.05 \div 9.99	0.01	$\pm (5.0\% \text{rdg} + 30 \text{dgt})$
10.0 \div 199.9	0.1	



COMBI519

Rel. 2.00 of 19/06/24

Multifunctional instrument for safety measurements

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Overall earth resistance in systems without Neutral (2-wire) – (30mA or higher RCD)

Range (Ω)	Resolution (Ω)	Accuracy
0.05 ÷ 9.99	0.01	± (5.0% rdg + 8dgt)
10.0 ÷ 99.9	0.1	
100 ÷ 1999	1	

Overall earth resistance in systems without Neutral (2-wire) – (6mA and 10mA RCD)

Range (Ω)	Resolution (Ω)	Accuracy
0.05 ÷ 9.99	0.01	± (5.0% rdg + 30dgt)
10.0 ÷ 99.9	0.1	
100 ÷ 1999	1	

Contact voltage

Range [V]	Resolution [V]	Accuracy
0 ÷ U_t LIM	0.1	-0%, +(5.0%rdg + 3V)

VOLTAGE DROP ON LINES ($\Delta V\%$)

Range [%]	Resolution [%]	Accuracy
0.0 ÷ 100.0	0.1	±(10.0%rdg + 4dgt)

PHASE ROTATION WITH 1 TEST LEAD

Voltage range P-N, P-PE[V]	Frequency range
100 ÷ 265	50Hz/60Hz ± 5%

Measurement is only carried out by direct contact with metal live parts (**not on insulation sheath**)



2. GENERAL SPECIFICATIONS

MECHANICAL CHARACTERISTICS

Dimensions (L x W x H):	225 x 165 x 75mm (9 x 6 x 3in)
Weight (batteries included):	1.2kg (42 ounces)
Mechanical protection:	IP40

MEMORY AND PC CONNECTIONS

Memory:	999 locations, 3 mark levels
PC connection:	optical/USB port

DISPLAY

Characteristics:	COG Black/white graphic LCD, 320x240pxl
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POWER SUPPLY

Battery type:	6x1.5V alkaline batteries type AA IEC LR06 or 6 x1.2V rechargeable NiMH type AA
Battery life:	> 500 tests for each function
Auto Power OFF:	after 5 minutes' idling (if activated)

ENVIRONMENTAL CONDITIONS FOR USE

Reference temperature:	23°C ± 5°C (73°F ± 41°F)
Operating temperature:	0°C ÷ 40°C (32°F ÷ 104°F)
Allowable relative humidity:	<80%RH
Storage temperature:	-10°C ÷ 60°C (14°F ÷ 140°F)
Storage humidity:	<80%RH
Max. operating altitude:	2000m (6562ft)

REFERENCE GUIDELINES

Safety:	IEC/EN61010-1, IEC/EN61010-2-030, IEC/EN61010-2-033 IEC/EN61010-2-034, IEC/EN61557-1
EMC :	IEC/EN61326-1
Technical documentation:	IEC/EN61187
Safety of accessories:	IEC/EN61010-031
Insulation:	double insulation
Pollution level:	2
Measurement category:	CAT IV 300V to earth, maximum 415V between inputs
RPE:	IEC/EN61557-4, BS7671 17th ed., AS/NZS3000/3017
MΩ:	IEC/EN61557-2, BS7671 17th ed., AS/NZS3000/3017
RCD:	IEC/EN61557-6 (only on Phase-Neutral-Earth systems)
RCD-DD:	IEC62955
RCD CCID:	UL2231-2
LOOP P-P, P-N, P-PE:	IEC/EN61557-3, BS7671 17th ed., AS/NZS3000/3017
Multifunction:	IEC/EN61557-10, BS7671 17th ed., AS/NZS3000/3017
Short-circuit current:	EN60909-0

This instrument satisfies the requirements of Low Voltage Directive 2014/35/EU (LVD) and of EMC Directive 2014/30/EU

This instrument satisfies the requirements of European Directive 2011/65/EU (RoHS) and 2012/19/EU (WEEE)

Diensten van EURO-INDEX

EURO-INDEX is fabrikant van BLAUWE LIJN en importeur/distributeur van diverse A-merken test- en meetinstrumenten. Wij leveren naast instrumenten ook de diensten om het gebruik hiervan in uw bedrijfsvoering te optimaliseren. Dit omvat uiteraard onderhoud, reparatie en kalibratie van instrumenten, maar ook kennisdeling via de EURO-INDEX Academy en verhuur van meetinstrumenten.

Geautoriseerd Service Centrum

EURO-INDEX is van de meeste merken in ons assortiment een Geautoriseerd Service Centrum. Dit betekent dat uw instrumenten worden behandeld door technici die zijn opgeleid door de fabrikant en beschikken over de juiste gereedschappen en software. Er worden uitsluitend originele onderdelen toegepast en de garantie van uw instrument blijft intact, net als de certificering (ATEX, EN50379, etc.).

Kalibratielaboratorium

Ons moderne service- en kalibratielaboratorium beschikt over een RvA accreditatie naar NEN-EN-ISO/IEC 17025. Deze accreditatie geldt voor grootheden, zoals gespecificeerd in de scope bij [accreditatienummer K105](#).



Kijk voor een overzicht van al onze diensten op euro-index.nl/diensten

KWS®

KWS® is een unieke kalibratieformule voor uw test- en meetinstrumenten met periodiek onderhoud en kalibratie tegen vaste, lage kosten.

Uw kalibratiecertificaten zijn digitaal beschikbaar via Mijn KWS (gratis webportaal en app) en door de QR-code te scannen van de kalibratiesticker op het instrument.

Verhuur van meetinstrumenten

Er zijn diverse situaties waarbij huren handig is:

- U heeft tijdelijk extra toestellen nodig.
- Uw eigen meetinstrument wordt onderhouden en/of gekalibreerd.
- U moet een eenmalige meting verrichten.

EURO-INDEX Academy

- Trainingen (individueel en klassikaal)
- Cursussen, infosessies en workshops
- Demonstratie- en instructievideo's
- Whitepapers



Servicebalie



Onderhoud, reparatie en kalibratie



Cursussen en workshops



Kalibratielaboratorium

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