

IMPULSE, POWER CONTACT & INDUCTION

# Surge and Telecom Testing





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Smart navigation through technical specifications. Click the green links.



### Accredited Calibration

Quality at EMC PARTNER is based on an ISO 9001 management system. This is the foundation for an ISO 17025 accreditation verified by the Swiss Calibration Service (SCS). SCS No. 146 is the accreditation number of EMC PARTNER AG. Locally accredited but recognized worldwide through affiliation with the ILAC organisation



## SPECIAL SURGE & TELECOM TEST SYSTEMS

# MOVING WITH THE TIMES

Traditional telecom systems have been overtaken by modern high-speed digital equipment. Standard pulses based on the lightning event remain unchanged, but unique CDNs are needed to transfer impulse energy into high-speed communication systems. Exchange and household equipment solutions are complimented by specialist protection device test solutions.

- › International Telecommunications Union (ITU)
- › Reproducible impulses
- › System and component level test solutions
- › Integrated personnel safety features



## UNIQUE FEATURES

**Test solutions built from a common hardware.**

### Complete Test Solutions



Impulse generators and specialist CDNs combined with equipment for Power Contact and Power Induction test solutions.

### Standard, but also application specific



There is a high degree of hardware commonality in EMC PARTNER impulse generators. Adapted for specific applications.

### Wide ranging



All impulse types available. Test applications from complete systems down to protection device component level.

### Leading technology



Solid state high voltage switches deliver reproducible impulses. For more confidence in test results.

# SPECIAL REQUIREMENTS ARE STANDARD

Long industry experience has produced many specialist generators to meet customer needs.

## Lightning Impulse

1.2/50  $\mu$ s

- › IEC 60060-1
- › IEC 61180-1
- › IEC 61180-2
- › IEC 60335-1

## CWG

1.2/50  $\mu$ s, 8/20  $\mu$ s

- › IEC 61000-4-5

## Telecom

10/700  $\mu$ s, 5/320  $\mu$ s

- › ITU-T K20
- › ITU-T K21
- › ITU-T K44
- › IEC 60950

## Ringwave

0.5/100kHz

- › IEC 61000-4-12

## Current impulse

10/350  $\mu$ s

8/20  $\mu$ s

10/1000  $\mu$ s ITU-T K44

- › IEC 61643-11

# Technical Specifications

## GENERATORS

Test system model	IEC61000-4-5	IEC61000-4-5	IEC61000-4-12	ANSI C62.41, .45	ITU-T Kxx	Insulation	Other
<b>Waveforms</b>	<b>1.2/50 <math>\mu</math>s, 8/20 <math>\mu</math>s</b>	<b>10/700 <math>\mu</math>s, 5/320 <math>\mu</math>s</b>	<b>0.5 <math>\mu</math>s / 100 kHz</b>				
MIG0612T-K12					K12		✓
MIG0624T-K12					K12		✓
MIG-ITU-K44					K20, 21, 44		
MIG0624TEL					K20, 21, 44		
MIG0648TEL					K20, 21, 44		
MIG1206	12.5 kV			CW	K20, 21, 44	IEC60060-1	IEC61643-1
MIG1206-1P	12.5 kV			CW	K20, 21, 44	IEC60060-1	IEC61643-1
MIG1206-1P-T	12.5 kV	6.3 kV		CW	K20, 21, 44	IEC60060-1	IEC61643-1
MIG1206-3P	12.5 kV			CW	K20, 21, 44	IEC60060-1	IEC61643-1
MIG1206-3P-63A	12.5 kV			CW	K20, 21, 44	IEC60060-1	IEC61643-1
MIG1206-3P-T	12.5 kV	6.3 kV		CW	K20, 21, 44	IEC60060-1	IEC61643-1

**CW** – Combination Wave (hybrid surge waveform)

**RW** – Ring wave 100 kHz

## CDNs AND ACCESSORIES

Generator model	IEC61000-4-5	Insulation	Other
<b>Waveforms</b>	<b>1.2/50 <math>\mu</math>s, 8/20 <math>\mu</math>s</b>		
CDN-MIG12-32	12 kV		
CDN-MIG12-32 690 V	12 kV		
TC-ST + WARNING-LAMP		IEC60060-1	✓
TC-ST-HL + WARNING-LAMP		IEC60060-1	✓
NW-K44-PC			ITU
NW-K44-PI			ITU
PCPI-160 PCPI			ITU
CN12-500		IEC60060-1	
CN12-12-500		IEC60060-1	

**CW** – Combination Wave (hybrid surge waveform)

**RW** – Ring wave 100 kHz

# GENERATORS

## MIG0612T-K12

### MIG0612T-K12 circuit: 8/20 $\mu$ s, 12 kA

Standard	ITU-T K.12
Impulse capacitance	2 x 20 $\mu$ F $\pm$ 10 %
Energy at max. voltage	2 x 435 joules
Adjustable current (<0.1 $\Omega$ )	(2 x) 0.25 kA – 6 kA $\pm$ 10 %, max. 12 kA
Current waveform	8 $\mu$ s $\pm$ 10 % / 20 $\mu$ s $\pm$ 10 %
Reversal current	< 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive, negative, alternating
Programmable ramp	current



### MIG0612T-K12 circuit: 10/350 $\mu$ s (<40/350 $\mu$ s), 4.4 kA for GDT only

Standard	ITU-T K.12
Impulse capacitance	2 x 20 $\mu$ F $\pm$ 10 %
Energy at max. voltage	2 x 435 joules
Adjustable current (<0.1 $\Omega$ )	(2 x) 0.1 kA – 2.2 kA $\pm$ 10 %, max. 4.4 kA
Current waveform	rise time: < 50 $\mu$ s, 0 – 100 %
Current waveform	half time: 350 $\mu$ s $\pm$ 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive only
Programmable ramp	current

### MIG0612T-K12 circuit: 10/1000 $\mu$ s (low range), 120 A

Standard	ITU-T K.12
Impulse capacitance	2 x 20 $\mu$ F $\pm$ 10 %
Energy at max. voltage	2 x 435 joules
Adjustable current (<0.1 $\Omega$ )	(2 x) 3 A – 60 A $\pm$ 10 %, max. 120 A
Current waveform	rise time: 10 $\mu$ s, 10 – 90 % x 1.25 $\pm$ 20 %
Current waveform	half time: 1000 $\mu$ s $\pm$ 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive, negative
Programmable ramp	Current

### MIG0612T-K12 circuit: 10/1000 $\mu$ s (100/1000 $\mu$ s, high range), 2 kA

<b>Standard</b>	ITU-T K.12
<b>Impulse capacitance</b>	2 x 20 $\mu$ F $\pm$ 10 %
<b>Energy at max. voltage</b>	2 x 435 joules
<b>Adjustable current (&lt;0.1 <math>\Omega</math>)</b>	(2 x) 40 A – 1 kA $\pm$ 10 %, max. 2 kA
<b>Current waveform</b>	rise time: 100 $\mu$ s, 10 – 90 % x 1.25 $\pm$ 20 %
<b>Current waveform</b>	half time: 1000 $\mu$ s $\pm$ 20 %
<b>Pulse repetition</b>	starting 1 pulse / 30 s
<b>Polarity</b>	positive only
<b>Programmable ramp</b>	Current

### MIG0612T-K12 control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Pulse voltage monitor BNC</b>	10 V = 6 kV, accuracy $\pm$ 3%
<b>Pulse current monitor BNC</b>	10 V = up to 20 kA, accuracy $\pm$ 3%
<b>Pulse voltage on display</b>	0.25 – 6.6 kV, accuracy $\pm$ 3%
<b>Pulse current on display</b>	0.1 – 11 kA, accuracy $\pm$ 3%
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### MIG0612T-K12 supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) $\pm$ 10%
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA
<b>Weight</b>	56 kg
<b>W x d x h</b>	45 x 57 x 61 cm
<b>Version</b>	19" unit, 12 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa

#### Included articles

<b>Power cord</b>	with country plug
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG0612T-K12 optional accessories

<b>Test cabinet</b>	TC-ST, WARNING-LAMP
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Software	TEMA: sequence, report, for latest Windows
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## MIG0624T-K12

### MIG0624T-K12 circuit: 8/20 $\mu$ s, 24 kA

Standard	ITU-T K.12
Impulse capacitance	2 x 18 $\mu$ F $\pm$ 10 %
Adjustable current (<0.1 $\Omega$ )	(2 x) 0.5 kA – 12 kA + 0 % -10 %, max. 24 kA
Current waveform	8 $\mu$ s $\pm$ 10 % / 20 $\mu$ s $\pm$ 10 %
Reversal current	< 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive, negative, alternating
Programmable ramp	current



### MIG0624T-K12 circuit: 10/350 $\mu$ s (<40/350 $\mu$ s), 8.8 kA for GDT only

Standard	ITU-T K.12
Impulse capacitance	2 x 18 $\mu$ F $\pm$ 10 %
Adjustable current (<0.1 $\Omega$ )	(2 x) 0.2 kA – 4.4 kA $\pm$ 10 %, max. 8.8 kA
Current waveform	rise time: < 50 $\mu$ s, 0 – 100 %
Current waveform	half time: 350 $\mu$ s $\pm$ 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive only
Programmable ramp	current

### MIG0624T-K12 circuit: 10/1000 $\mu$ s (low range), 240 A

Standard	ITU-T K.12
Impulse capacitance	2 x 18 $\mu$ F $\pm$ 10 %
Adjustable current (<0.1 $\Omega$ )	(2 x) 5 A – 120 A $\pm$ 10 %, max. 240 A
Current waveform	rise time: < 50 $\mu$ s, 0 – 100 %
Current waveform	half time: 1000 $\mu$ s $\pm$ 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive, negative
Programmable ramp	current

### MIG0624T-K12 circuit: 10/1000 $\mu$ s (100/1000 $\mu$ s, high range), 4 kA

Standard	ITU-T K.12
Impulse capacitance	2 x 18 $\mu$ F $\pm$ 10 %
Adjustable current (<0.1 $\Omega$ )	(2 x) 80 A – 2 kA $\pm$ 10 %, max. 4 kA
Current waveform	rise time: < 100 $\mu$ s, 10 – 90 %

<b>Current waveform</b>	half time: 1000 $\mu$ s $\pm$ 20 %
<b>Pulse repetition</b>	starting 1 pulse / 30 s
<b>Polarity</b>	positive only
<b>Programmable ramp</b>	current

### MIG0624T-K12 control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Pulse voltage monitor BNC</b>	10 V = 6 kV, accuracy $\pm$ 3%
<b>Pulse current monitor BNC</b>	10 V = up to 20 kA, accuracy $\pm$ 3%
<b>Pulse voltage on display</b>	0.25 – 6.6 kV, accuracy $\pm$ 3%
<b>Pulse current on display</b>	0.1 – 20 kA, accuracy $\pm$ 3%
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### MIG0624T-K12 supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) $\pm$ 10%
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA
<b>Weight</b>	71 kg
<b>W x d x h</b>	45 x 57 x 61 cm
<b>Version</b>	19" unit, 12 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG0624T-K12 optional accessories

<b>Test cabinet</b>	TC-ST, WARNING-LAMP
<b>Software</b>	TEMA: sequence, report, for latest Windows

## MIG-ITU-K44

### MIG-ITU-K44 circuit:

<b>Application</b>	power induction test at line freq. 50 and 60 Hz
<b>Standards</b>	ITU-T K.20, K.21, K.44
<b>Power input</b>	230 V, 16 A (fused), 50/60 Hz
<b>Voltage output</b>	50 – 1700 V (manually adjustable)
<b>Voltage setting</b>	10 V step
<b>Output impedance</b>	0 Ω, fuse protected (16 A) 2 x 200 Ω, overheat protected 2 x 600 Ω, overheat protected
<b>Output power</b>	3.5 kVA continuous, 7 kVA for 2 s
<b>Specific energy</b>	10 A <sup>2</sup> s, with 200 Ω resistors 1 A <sup>2</sup> s, with 600 Ω resistors 0.2 A <sup>2</sup> s, achieved by reducing test time
<b>Test frequencies</b>	50 Hz and 60 Hz
<b>Time setting</b>	0.1 – 9.9 s
<b>Voltage meas./displayed</b>	1 – 1999 V ± 3 %
<b>Current meas./displayed</b>	0 – 19.9 A ± 3 %
<b>Current waveform at BNC</b>	10 V = 20 A ± 3 %



### MIG-ITU-K44 supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	power input utilized for supply
<b>Power consumption</b>	ON < 400 VA, standby < 50 VA
<b>Weight</b>	181 kg
<b>W x d x h</b>	60 x 65 x 123 cm
<b>Version</b>	19" rack, 18 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

## Overview power induction tests and mains power contact tests

Generators | CDNS & Accessories

	Power induction tests			Mains power contact tests		
	600V 200Ω	600V 600Ω	1500V 200Ω	230V 10, 20, 40Ω	230V 80Ω, 160Ω	230V 300, 600, 1000Ω
MIG-ITU-K44	✓	✓	✓			
NW-K44-PC				✓	✓	✓
NW-K44-PI	✓	✓				
PCPI160E				✓	✓	

1: VAR-EXT1000 plus IMU can be used up to 23 A continuous

2: ITU basic and enhanced levels are differentiated by test time and accept. criteria A, B

3: NW-K44-PC and NW-K44-PI require IMU and VAR-EXT1000 as source

4: NW-K44-PI requires NW-K44-PC, IMU and VAR-EXT1000 as source

## MIG0624TEL

### MIG0624TEL circuit: 8/20 μs, 4 x 6 kA (4 lines output)

Standard	ITU-T K.20, K.21 (ITU-T K.44 lightning gen.)
Impulse capacitance	4 x 20 μF ± 10 %
Energy at max. voltage	1500 joules
Source impedance	1 Ω / line
Adjust. current (<0.02 Ω)	(4 x) 0.25 kA – 6 kA + 10 % -5 %
Current waveform	8 μs ± 20 % / 20 μs ± 20 %
Reversal current	< 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive, negative, alternating
Programmable ramp	current
Voltage waveform OC	<1 μs / 90 μs (approximately)



### MIG0624TEL circuit: 8/20 μs, 24 kA (1 line output)

Standard	ITU-T K.20, K.21 (ITU-T K.44 lightning gen.)
Impulse capacitance	4 x 20 μF ± 10 %
Energy at max. voltage	1500 joules
Source impedance	4 x 1 Ω in parallel: 0.25 Ω
Adjust. current (<0.02 Ω)	1 kA – 24 kA + 10 % -5 %
Current waveform	8 μs ± 20 % / 20 μs ± 20 %
Reversal current	< 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive, negative, alternating
Programmable ramp	Current
Voltage waveform OC	<1 μs / 90 μs (approximately)

### MIG0624TEL control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Pulse voltage monitor BNC</b>	10 V = 6 kV, accuracy $\pm 3\%$
<b>Pulse current monitor BNC</b>	10 V = up to 20 kA, accuracy $\pm 3\%$
<b>Pulse voltage on display</b>	0.25 – 6.6 kV, accuracy $\pm 3\%$
<b>Pulse current on display</b>	1 – 25 kA, accuracy $\pm 3\%$
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### MIG0624TEL supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) $\pm 10\%$
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA
<b>Weight</b>	60 kg
<b>W x d x h</b>	45 x 60 x 46 cm
<b>Version</b>	19" unit, 8 UH, plus connection box
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>4 x connection cables 1m</b>	waveform guaranteed at cables output
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG0624TEL optional accessories

<b>Software</b>	TEMA: sequence, report, for latest Windows
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## MIG0648TEL

### MIG0648TEL circuit: 8/20 $\mu$ s, 8 x 6 kA (8 lines output)

Standards	ITU-T K.20, K.21 (ITU-T K.44 lightning gen.)
Impulse capacitance	8 x 20 $\mu$ F $\pm$ 10 %
Energy at max. voltage	3000 joules
Source impedance	1 $\Omega$ / line
Adjust. current (<0.02 $\Omega$ )	(8 x) 0.25 kA – 6 kA + 10 % -5 %
Current waveform	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
Reversal current	< 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive, negative, alternating
Programmable ramp	current
Voltage waveform OC	<1 $\mu$ s / 90 $\mu$ s (approximately)



### MIG0648TEL circuit: 8/20 $\mu$ s, 48 kA (1 line output)

Standards	ITU-T K.20, K.21 (ITU-T K.44 lightning gen.)
Impulse capacitance	8 x 20 $\mu$ F $\pm$ 10 %
Energy at max. voltage	3000 joules
Source impedance	8 x 1 $\Omega$ in parallel: 0.125 $\Omega$
Adjust. current (<0.02 $\Omega$ )	1 kA – 48 kA + 10 % -5 %
Current waveform	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
Reversal current	< 20 %
Pulse repetition	starting 1 pulse / 30 s
Polarity	positive, negative, alternating
Programmable ramp	current
Voltage waveform OC	<1 $\mu$ s / 90 $\mu$ s (approximately)

### MIG0648TEL control features

User interface	LCD and keypad, efficient menu structure
Communication interface	RS232 with (optional) adapter to USB
Pulse voltage monitor BNC	10 V = 6 kV, accuracy $\pm$ 3%
Pulse current monitor BNC	10 V = up to 48 kA, accuracy $\pm$ 3%
Pulse voltage on display	0.25 – 6.6 kV, accuracy $\pm$ 3%
Pulse current on display	1 – 48 kA, accuracy $\pm$ 3%
Trigger out	BNC, max. 12 V
Trigger in	auto, manual, external (BNC input)
Impulse counter	programmable up to 29'999
Emergency stop	Emergency Stop button, BNC input (EUT Fail)
Internal memory	up to 15 tests can be saved and recalled

### MIG0648TEL supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) ± 10%
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA

<b>Weight</b>	130 kg
<b>W x d x h</b>	61 x 68 x 123 cm
<b>Version</b>	19" rack, 18 UH, plus connection box

<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa

#### Included articles

<b>Power cord</b>	with country plug
<b>8 x connection cables 1m</b>	waveform guaranteed at cables output
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG0648TEL optional accessories

<b>Test cabinet</b>	TC-ST, WARNING-LAMP
<b>Test cabinet heavy load</b>	TC-ST-HL, WARNING-LAMP
<b>Software</b>	TEMA: sequence, report, for latest Windows

## MIG1206

### MIG1206 circuit: CWG / Surge 12.5 kV

<b>Standards</b>	IEC61000-4-5, ANSI C62.41, C62.45, IEC60060-1, ITU-T K.20, 21, 44, IEC61643-1 Part 1/Class III
<b>Impulse capacitance</b>	10 $\mu$ F $\pm$ 10 %
<b>Energy at max. voltage</b>	750 joules
<b>Output impedance</b>	2 $\Omega$ $\pm$ 10 %
<b>Adjustable voltage OC</b>	1 kV – 12.5 kV $\pm$ 10 %
<b>Voltage waveform</b>	1.2 $\mu$ s $\pm$ 30 % / 50 $\mu$ s $\pm$ 20 %
<b>Current SC</b>	0.5 kA – 6.25 kA $\pm$ 10 %
<b>Current waveform</b>	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
<b>Undershoot</b>	< 30 %
<b>Pulse repetition</b>	up to 1 / 5 s @ 1 kV, 1 / 30 s @ 12 kV
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 360°, step 1°
<b>Programmable ramps</b>	voltage, synchronisation angle



### MIG1206 control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Surge voltage monitor BNC</b>	10 V = 12 kV, accuracy $\pm$ 3%
<b>Surge current monitor BNC</b>	10 V = 6 kA, accuracy $\pm$ 3%
<b>Surge voltage on display</b>	0.5 – 13.2 kV, accuracy $\pm$ 3%
<b>Surge current on display</b>	0.25 – 6.6 kA, accuracy $\pm$ 3%
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Synchro. source</b>	EUT power, direct out
<b>Power synchro. on/off</b>	0 – 360°, 1° step
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### MIG1206 supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) ± 10%
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA
<b>Weight</b>	37 kg
<b>W x d x h</b>	45 x 57 x 25 cm
<b>Version</b>	19" unit, 4 UH +
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG1206 optional accessories

<b>Test cabinet</b>	TC-ST, WARNING-LAMP
<b>CDN for power lines</b>	CDN-MIG12-32 (manual, 3 phase)
<b>Matching networks</b>	CN12-12-500, CN12-500 (insulation test)
<b>Software</b>	TEMA: sequence, report, for latest Windows

## MIG1206-1P

### MIG1206-1P circuit: CWG / Surge 12.5 kV

<b>Standards</b>	IEC61000-4-5, ANSI C62.41, C62.45, IEC60060-1, ITU-T K.20, 21, 44, IEC61643-1 Part 1/Class III
<b>Impulse capacitance</b>	10 $\mu$ F $\pm$ 10 %
<b>Energy at max. voltage</b>	750 joules
<b>Output impedance</b>	2 $\Omega$ $\pm$ 10 %
<b>Adjustable voltage OC</b>	0.4 kV – 12.5 kV $\pm$ 10 %
<b>Calibrated level</b>	1 kV – 12 kV
<b>Voltage waveform</b>	1.2 $\mu$ s $\pm$ 30 % / 50 $\mu$ s $\pm$ 20 %
<b>Current SC</b>	0.5 kA – 6.25 kA $\pm$ 10 %
<b>Current waveform</b>	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
<b>Undershoot</b>	< 30 %
<b>Pulse repetition</b>	up to 1 / 5 s @ 1 kV, 1 / 30 s @ 12 kV
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 360°, step 1°
<b>Programmable ramps</b>	voltage, synchronisation angle



### MIG1206-1P built-in automatic CDN

<b>Test level surge</b>	12 kV
<b>EUT power input</b>	AC 480V L-N, 480 V L/N-PE, 32A DC 110 V, 25A (not fused)
<b>EUT overcurrent protection</b>	CDN input fused 32 A AC
<b>Internal CDN freq. range</b>	DC, 50 Hz, 60 Hz
<b>Coupling surge IEC</b>	2 $\Omega$ : L-N, direct out, 12 $\Omega$ : L-PE, N-PE
<b>Coupling surge ANSI</b>	2 $\Omega$ : L-N, L-PE, N-PE, L+N-PE 12 $\Omega$ : L-N, L-PE, N-PE
<b>Decoupling</b>	as in IEC61000-4-5

### MIG1206-1P control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Surge voltage monitor BNC</b>	10 V = 12 kV, accuracy $\pm$ 3%
<b>Surge current monitor BNC</b>	10 V = 6 kA, accuracy $\pm$ 3%
<b>Surge voltage on display</b>	0.5 – 13.2 kV, accuracy $\pm$ 3%
<b>Surge current on display</b>	0.25 – 6.6 kA, accuracy $\pm$ 3%
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Synchro. source</b>	EUT power, direct out
<b>Power synchro. on/off</b>	0 – 360°, 1° step
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### MIG1206-1P supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) ± 10%
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA
<b>Weight</b>	67 kg
<b>W x d x h</b>	45 x 60 x 37 cm
<b>Version</b>	19" unit, 8 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>Supply connection</b>	3 cables x 2 m, banana plugs
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG1206-1P optional accessories

<b>Test cabinet</b>	TC-ST-HL, WARNING-LAMP
<b>CDNs for I/O lines (surge 1.2/50 µs)</b>	CDN-KIT1000 ED3, CDN-DATA-4L, CDN-DATA-8L (all CDNs up to 6 kV)
<b>CDNs for I/O lines (surge 1.2/50 µs)</b>	CDN UTP ED3, CDN UTP8 ED3 (all CDNs up to 6 kV) 1.2/50 µs
<b>Software</b>	TEMA: sequence, report, for latest Windows

## MIG1206-1P-T

### MIG1206-1P-T circuit: CWG / Surge 12.5 kV

<b>Standards</b>	IEC61000-4-5, ANSI C62.41, C62.45, IEC60060-1, ITU-T K.20, 21, 44, IEC61643-1 Part 1/Class III
<b>Impulse capacitance</b>	10 $\mu\text{F} \pm 10\%$
<b>Energy at max. voltage</b>	750 joules
<b>Output impedance</b>	2 $\Omega \pm 10\%$
<b>Adjustable voltage OC</b>	0.4 kV – 12.5 kV $\pm 10\%$
<b>Calibrated level</b>	1 kV – 12 kV
<b>Voltage waveform</b>	1.2 $\mu\text{s} \pm 30\%$ / 50 $\mu\text{s} \pm 20\%$
<b>Current SC</b>	0.5 kA – 6.25 kA $\pm 10\%$
<b>Current waveform</b>	8 $\mu\text{s} \pm 20\%$ / 20 $\mu\text{s} \pm 20\%$
<b>Undershoot</b>	< 30 %
<b>Pulse repetition</b>	up to 1 / 5 s @ 1 kV, 1 / 30 s @ 12 kV
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 360°, step 1°
<b>Programmable ramps</b>	voltage, synchronisation angle



### MIG1206-1P-T circuit: Telecom surge

<b>Standards</b>	IEC61000-4-5, ITU-T K.44
<b>Impulse capacitance</b>	20 $\mu\text{F} \pm 10\%$
<b>Energy at max. voltage</b>	440 joules
<b>Output impedance</b>	15 $\Omega$ or 40 $\Omega \pm 10\%$ , selectable
<b>Voltage OC</b>	0.25 kV – 6.3 kV $\pm 10\%$
<b>Calibrated level</b>	0.5 kV – 6 kV
<b>Voltage waveform OC</b>	10 $\mu\text{s} \pm 30\%$ / 700 $\mu\text{s} \pm 20\%$
<b>Current SC into 40 <math>\Omega</math></b>	6.25 A – 157.5 A $\pm 10\%$
<b>Current waveform SC</b>	5 $\mu\text{s} \pm 20\%$ / 320 $\mu\text{s} \pm 20\%$
<b>Pulse repetition</b>	up to 1 / 4 s @ 0.5 kV, 1 / 9 s @ 6.1 kV
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramps</b>	voltage

### MIG1206-1P-T built-in automatic CDN

<b>Test level surge</b>	12 kV
<b>EUT power input</b>	AC 480V L-N, 480 V L/N-PE, 32A DC 110 V, 25A (not fused)
<b>EUT overcurrent protection</b>	CDN automatic input fuse 32 A AC
<b>Internal CDN freq. range</b>	DC, 50 Hz, 60 Hz
<b>Coupling surge IEC</b>	2 $\Omega$ : L-N, direct out, 12 $\Omega$ : L-PE, N-PE
<b>Coupling surge ANSI</b>	2 $\Omega$ : L-N, L-PE, N-PE 12 $\Omega$ : L-N, L-PE, N-PE, L+N-PE
<b>Decoupling</b>	as in IEC61000-4-5
<b>Coupling telecom surge</b>	not applicable to supply lines, see I/O CDNs

### MIG1206-1P-T control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Surge voltage monitor BNC</b>	10 V = 12 kV, accuracy $\pm$ 3%
<b>Surge current monitor BNC</b>	10 V = 6 kA, accuracy $\pm$ 3%
<b>Surge voltage on display</b>	0.5 – 13.2 kV, accuracy $\pm$ 3%
<b>Surge current on display</b>	0.25 – 6.6 kA, accuracy $\pm$ 3%
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Synchro. source</b>	EUT power, direct out
<b>Power synchro. on/off</b>	0 – 360°, 1° step
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### MIG1206-1P-T supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) $\pm$ 10%
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA

<b>Weight</b>	83 kg
<b>W x d x h</b>	45 x 60 x 55 cm
<b>Version</b>	19" unit, 12 UH

<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa

#### Included articles

<b>Power cord</b>	with country plug
<b>Supply connection</b>	3 cables x 2 m, banana plugs
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG1206-1P-T optional accessories

<b>Test cabinet</b>	TC-ST-HL, WARNING-LAMP
<b>CDNs for I/O lines (surge 1.2/50 <math>\mu</math>s)</b>	CDN-KIT1000 ED3, CDN-DATA-4L, CDN-DATA-8L (all CDNs up to 6 kV)
<b>CDNs for I/O lines (surge 1.2/50 <math>\mu</math>s and 10/700 <math>\mu</math>s)</b>	CDN UTP ED3, CDN UTP8 ED3 (all CDNs up to 6 kV) 1.2/50 $\mu$ s and 5kV 10/700 $\mu$ s
<b>Software</b>	TEMA: sequence, report, for latest Windows

## MIG1206-3P

### MIG1206-3P circuit: CWG / Surge 12.5 kV

<b>Standards</b>	IEC61000-4-5, ANSI C62.41, C62.45, IEC60060-1, ITU-T K.20, 21, 44, IEC61643-1 Part 1/Class III
<b>Impulse capacitance</b>	10 $\mu\text{F} \pm 10\%$
<b>Energy at max. voltage</b>	750 joules
<b>Output impedance</b>	2 $\Omega \pm 10\%$
<b>Adjustable voltage OC</b>	1 kV – 12.5 kV $\pm 10\%$
<b>Calibrated level</b>	1 kV – 12 kV
<b>Voltage waveform</b>	1.2 $\mu\text{s} \pm 30\%$ / 50 $\mu\text{s} \pm 20\%$
<b>Current SC</b>	0.5 kA – 6.25 kA $\pm 10\%$
<b>Current waveform</b>	8 $\mu\text{s} \pm 20\%$ / 20 $\mu\text{s} \pm 20\%$
<b>Undershoot</b>	< 30 %
<b>Pulse repetition</b>	up to 1 / 5 s @ 1 kV, 1 / 30 s @ 12 kV
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 360°, step 1°
<b>Programmable ramps</b>	voltage, synchronisation angle



### MIG1206-3P built-in automatic 3 phase CDN

<b>Test level surge</b>	12 kV
<b>EUT power input 3</b>	AC 3 x 480V L-L, L-N/PE, 3 x 32 A DC 110 V, 25A per phase (not fused)
<b>EUT overcurrent protection</b>	CDN automatic input fuse 3 x 32 A AC
<b>Internal CDN freq. range</b>	DC, 50 Hz, 60 Hz
<b>Coupling surge IEC</b>	2 $\Omega$ : Lx-Ly, Lx-N, direct out, 12 $\Omega$ : Lx-PE, N-PE
<b>Coupling surge ANSI</b>	2 $\Omega$ : Lx-N, Lx-PE, N-PE 12 $\Omega$ : Lx-N, Lx-PE, N-PE
<b>Decoupling</b>	as in IEC61000-4-5

### MIG1206-3P control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Surge voltage monitor BNC</b>	10 V = 12 kV, accuracy $\pm 3\%$
<b>Surge current monitor BNC</b>	10 V = 6 kA, accuracy $\pm 3\%$
<b>Surge voltage on display</b>	0.5 – 13.2 kV, accuracy $\pm 3\%$
<b>Surge current on display</b>	0.25 – 6.6 kA, accuracy $\pm 3\%$
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Synchro. source</b>	EUT power, direct out
<b>Power synchro. on/off</b>	0 – 360°, 1° step
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### MIG1206-3P supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) $\pm 10\%$
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA
<b>Weight</b>	180 kg
<b>W x d x h</b>	60 x 65 x 123 cm
<b>Version</b>	19" rack, 18 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>Supply connection</b>	5 cables x 2 m, banana plugs
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG1206-3P optional accessories

<b>Test cabinet</b>	TC-ST-HL, WARNING-LAMP
<b>Software</b>	TEMA: sequence, report, for latest Windows

## MIG1206-3P-63A

### MIG1206-3P-63A circuit: CWG / Surge 12.5 kV

<b>Standards</b>	IEC61000-4-5, ANSI C62.41, C62.45, IEC60060-1, ITU-T K.20, 21, 44, IEC61643-1 Part 1/Class III
<b>Impulse capacitance</b>	10 $\mu$ F $\pm$ 10 %
<b>Energy at max. voltage</b>	750 joules
<b>Output impedance</b>	2 $\Omega$ $\pm$ 10 %
<b>Adjustable voltage OC</b>	1 kV – 12.5 kV $\pm$ 10 %
<b>Calibrated level</b>	1 kV – 12 kV
<b>Voltage waveform</b>	1.2 $\mu$ s $\pm$ 30 % / 50 $\mu$ s $\pm$ 20 %
<b>Current SC</b>	0.5 kA – 6.25 kA $\pm$ 10 %
<b>Current waveform</b>	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
<b>Undershoot</b>	< 30 %
<b>Pulse repetition</b>	up to 1 / 5 s @ 1 kV, 1 / 30 s @ 12 kV
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 360°, step 1°
<b>Programmable ramps</b>	voltage, synchronisation angle



### MIG1206-3P-63A built-in automatic 3 phase CDN

<b>Test level surge</b>	12 kV
<b>EUT power input 3</b>	AC 3 x 480V L-L, L-N/PE, 3 x 63 A DC 110 V, 25A per phase (not fused)
<b>EUT overcurrent protection</b>	CDN automatic input fuse 3 x 63 A AC
<b>Internal CDN freq. range</b>	DC, 50 Hz, 60 Hz
<b>Coupling surge IEC</b>	2 $\Omega$ : Lx-Ly, Lx-N, direct out, 12 $\Omega$ : Lx-PE, N-PE
<b>Coupling surge ANSI</b>	2 $\Omega$ : Lx-N, Lx-PE, N-PE 12 $\Omega$ : Lx-N, Lx-PE, N-PE
<b>Decoupling</b>	as in IEC61000-4-5

### MIG1206-3P-63A control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Surge voltage monitor BNC</b>	10 V = 12 kV, accuracy $\pm$ 3%
<b>Surge current monitor BNC</b>	10 V = 6 kA, accuracy $\pm$ 3%
<b>Surge voltage on display</b>	0.5 – 13.2 kV, accuracy $\pm$ 3%
<b>Surge current on display</b>	0.25 – 6.6 kA, accuracy $\pm$ 3%
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Synchro. source</b>	EUT power, direct out
<b>Power synchro. on/off</b>	0 – 360°, 1° step
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### **MIG1206-3P-63A supply, weight, dimensions, climatic conditions**

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) ± 10%
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA
<b>Weight</b>	220 kg
<b>W x d x h</b>	60 x 65 x 123 m
<b>Version</b>	19" rack, 18 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>Supply connection</b>	5 cables x 2 m, banana plugs
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### **MIG1206-3P-63A optional accessories**

<b>Test cabinet</b>	TC-ST-HL, WARNING-LAMP
<b>Software</b>	TEMA: sequence, report, for latest Windows

## MIG1206-3P-T

### MIG1206-3P-T circuit: CWG / Surge 12.5 kV

<b>Standards</b>	IEC61000-4-5, ANSI C62.41, C62.45, IEC60060-1, ITU-T K.20, 21, 44, IEC61643-1 Part 1/Class III
<b>Impulse capacitance</b>	10 $\mu$ F $\pm$ 10 %
<b>Energy at max. voltage</b>	750 joules
<b>Output impedance</b>	2 $\Omega$ $\pm$ 10 %
<b>Adjustable voltage OC</b>	1 kV – 12.5 kV $\pm$ 10 %
<b>Calibrated level</b>	1 kV – 12 kV
<b>Voltage waveform</b>	1.2 $\mu$ s $\pm$ 30 % / 50 $\mu$ s $\pm$ 20 %
<b>Current SC</b>	0.5 kA – 6.25 kA $\pm$ 10 %
<b>Current waveform</b>	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
<b>Undershoot</b>	< 30 %
<b>Pulse repetition</b>	up to 1 / 5 s @ 1 kV, 1 / 30 s @ 12 kV
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 360°, step 1°
<b>Programmable ramps</b>	voltage, synchronisation angle



### MIG1206-3P-T circuit: Telecom surge

<b>Standards</b>	IEC61000-4-5, ITU-T K.44
<b>Impulse capacitance</b>	20 $\mu$ F $\pm$ 10 %
<b>Energy at max. voltage</b>	440 joules
<b>Output impedance</b>	15 $\Omega$ or 40 $\Omega$ $\pm$ 10 %, selectable
<b>Voltage OC</b>	0.25 kV – 6.3 kV $\pm$ 10 %
<b>Calibrated level</b>	0.5 kV – 6 kV
<b>Voltage waveform OC</b>	10 $\mu$ s $\pm$ 30 % / 700 $\mu$ s $\pm$ 20 %
<b>Current SC into 40 <math>\Omega</math></b>	6.25 A – 157.5 A $\pm$ 10 %
<b>Current waveform SC</b>	5 $\mu$ s $\pm$ 20 % / 320 $\mu$ s $\pm$ 20 %
<b>Pulse repetition</b>	up to 1 / 4 s @ 0.5 kV, 1 / 9 s @ 6.1 kV
<b>Polarity</b>	positive, negative, alternating
<b>Programmable ramps</b>	Voltage

### MIG1206-3P-T built-in automatic 3 phase CDN

<b>Test level surge</b>	12 kV
<b>EUT power input 3</b>	AC 3 x 480V L-L, L-N/PE, 3 x 32 A DC 110 V, 25A per phase (not fused)
<b>EUT overcurrent protection</b>	CDN automatic input fuse 3 x 32 A AC
<b>Internal CDN freq. range</b>	DC, 50 Hz, 60 Hz
<b>Coupling surge IEC</b>	2 $\Omega$ : Lx-Ly, Lx-N, direct out, 12 $\Omega$ : Lx-PE, N-PE
<b>Coupling surge ANSI</b>	2 $\Omega$ : Lx-N, Lx-PE, N-PE 12 $\Omega$ : Lx-N, Lx-PE, N-PE
<b>Decoupling</b>	as in IEC61000-4-5
<b>Coupling telecom surge</b>	not applicable to supply lines, see I/O CDNs

### MIG1206-3P-T control features

<b>User interface</b>	LCD and keypad, efficient menu structure
<b>Communication interface</b>	RS232 with (optional) adapter to USB
<b>Surge voltage monitor BNC</b>	10 V = 12 kV, accuracy $\pm 3\%$
<b>Surge current monitor BNC</b>	10 V = 6 kA, accuracy $\pm 3\%$
<b>Surge voltage on display</b>	0.5 – 13.2 kV, accuracy $\pm 3\%$
<b>Surge current on display</b>	0.25 – 6.6 kA, accuracy $\pm 3\%$
<b>Trigger out</b>	BNC, max. 12 V
<b>Trigger in</b>	auto, manual, external (BNC input)
<b>Synchro. source</b>	EUT power, direct out
<b>Power synchro. on/off</b>	0 – 360°, 1° step
<b>Impulse counter</b>	programmable up to 29'999
<b>Emergency stop</b>	Emergency Stop button, BNC input (EUT Fail)
<b>Internal memory</b>	up to 15 tests can be saved and recalled

### MIG1206-3P-T supply, weight, dimensions, climatic conditions

<b>Operating voltage</b>	115 / 230 V (50/60 Hz) $\pm 10\%$
<b>Power consumption</b>	ON < 400 VA, standby < 10 VA
<b>Weight</b>	187 kg
<b>W x d x h</b>	60 x 65 x 123 cm
<b>Version</b>	19" rack, 18 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>Supply connection</b>	5 cables x 2 m, banana plugs
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration

### MIG1206-3P-T optional accessories

<b>Test cabinet</b>	TC-ST-HL, WARNING-LAMP
<b>Software</b>	TEMA: sequence, report, for latest Windows

# COUPLING / DECOUPLING NETWORKS

## COUPLING/DECOUPLING NETWORKS FOR POWER LINES

### CDN-MIG12-32

<b>Standard</b>	IEC61000-4-5 latest edition
<b>Type</b>	3P, manual
<b>EUT voltage AC</b>	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 32 A
<b>EUT protection AC</b>	over-current automatic prot., < 1 s @ 125 A
<b>EUT power DC</b>	max. 300 V, 60 A (ask for details)
<b>Test level surge</b>	max. 12 kV, all IEC coupling paths
<b>Coupling paths</b>	L1-L2, L1-L3, L2-L3, L1-N, L2-N, L3-N, L1-PE, L2-PE, L3-PE, N-PE
<b>Coupling and decoupling</b>	full compliant to latest editions
<b>Dimensions</b>	19 " unit, 4 UH
<b>Weight</b>	48 kg
<b>Generators</b>	MIG1206



### CDN-MIG12-32 690 V

<b>Standard</b>	IEC61000-4-5 latest edition
<b>Type</b>	3P, manual
<b>EUT voltage AC</b>	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 32 A
<b>EUT protection AC</b>	over-current automatic prot., < 1 s @ 125 A
<b>EUT power DC</b>	max. 300 V, 60 A (ask for details)
<b>Test level surge</b>	max. 12 kV, all IEC coupling paths
<b>Coupling paths</b>	L1-L2, L1-L3, L2-L3, L1-N, L2-N, L3-N, L1-PE, L2-PE, L3-PE, N-PE
<b>Coupling and decoupling</b>	full compliant to latest editions
<b>Dimensions</b>	19 " unit, 4 UH
<b>Weight</b>	48 kg
<b>Generators</b>	MIG1206



# ACCESSORIES

## ACCESSORIES AS PER ITU-T K.xx LATEST EDITION

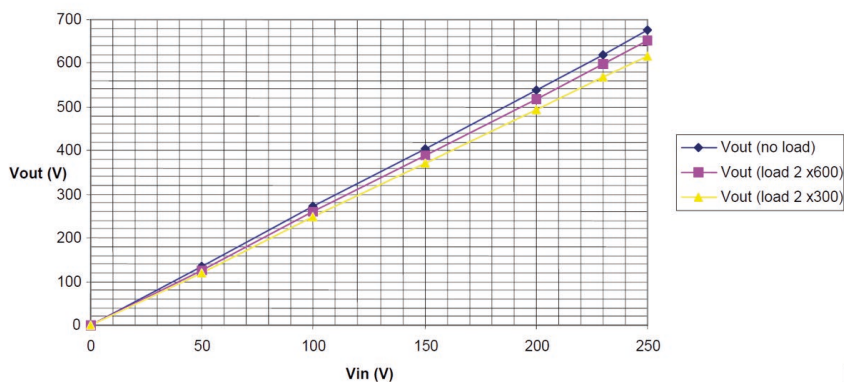
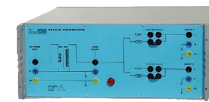
### NW-K44-PC

<b>Application</b>	mains power contact network with limiting resistors for power contact tests
<b>Standard</b>	ITU-T K.44
<b>Max. voltage</b>	230 V, limited by variac
<b>Max. current</b>	16 A, limited by IMU and variac
<b>Built-in limiting resistors</b>	2 x 300 $\Omega$ , 2 x 600 $\Omega$ , 2 x 1000 $\Omega$ , 2 x 1200 $\Omega$
<b>External limiting resistors</b>	use direct output
<b>Power input</b>	from public mains via variac and IMU
<b>Dimensions</b>	19" unit, 4 UH
<b>Weight</b>	13 kg
<b>Generator required</b>	IMU with D module and VAR-EXT1000



### NW-K44-PI

<b>Application</b>	option to NW-K44-PC for power induction tests
<b>Standard</b>	ITU-T K.44
<b>Transformer</b>	built-in transformer
<b>Max. output voltage</b>	< 600 V in all cases, see below characteristic
<b>Built-in limiting resistors</b>	2 x 200 $\Omega$ , 2 x 600 $\Omega$
<b>External limiting resistors</b>	use direct output
<b>Power input</b>	from public mains via variac and IMU
<b>Dimensions</b>	19" unit, 4 UH
<b>Weight</b>	31 kg
<b>Requires</b>	IMU with D module, VAR-EXT1000, NW-K44-PC



### PCPI160E

<b>Application</b>	resistor sets for power contact sets
<b>Standard</b>	ITU-T K.xx
<b>Basic resistor</b>	160 $\Omega$ $\pm$ 2 %
<b>Max. power dissipation</b>	500 W / 250 V
<b>Selectable resistors with one unit parallel connection</b>	ask for details
<b>Selectable resistors with two units serial connection</b>	ask for details
<b>Selectable resistors with one unit serial connection</b>	160, 320, 480, 640 $\Omega$
<b>Delivery</b>	two resistor units
<b>For testing simultaneously 2 telecom lines</b>	four resistor units required (2xPCPI160E)
<b>Dimensions</b>	unit: 66 x 51 x 26 cm (x 2 units)
<b>Weight</b>	unit: 25 kg (x 2 units)
<b>Requires</b>	IMU with D module, VAR-EXT1000, <a href="#">NW-K44-PC</a>



## ACCESSORIES AS PER IEC60060-1 LATEST EDITION

### CN12-500

<b>Application</b>	insulation test matching network
<b>Standard</b>	IEC60060-1
<b>Output impedance</b>	500 $\Omega$
<b>Test level</b>	max. 12 kV
<b>Output connectors</b>	AMP
<b>Dimensions</b>	24 x 10 x 8.5 cm
<b>Weight</b>	1.5 kg
<b>Generators</b>	MIG1206
<b>Accessories</b>	CN-MIG18 AMP



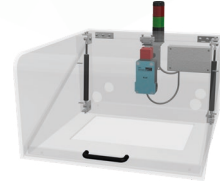
### CN12-12-500

<b>Application</b>	insulation test matching network
<b>Standard</b>	IEC60060-1
<b>Output impedance</b>	12 $\Omega$ , 500 $\Omega$
<b>Test level</b>	max. 12 kV
<b>Output connectors</b>	AMP
<b>Dimensions</b>	24 x 10 x 8.5 cm
<b>Weight</b>	2 kg
<b>Generators</b>	MIG1206
<b>Accessories</b>	ask for details on connection cables



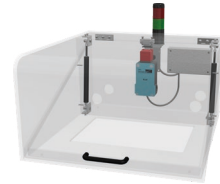
### TC-ST

<b>Standard</b>	multiple
<b>Application</b>	test cabinet with safety circuit
<b>EUT volume</b>	20 x 20 x 30 cm
<b>Warning lamps</b>	red and green (2 lamps)
<b>Test cabinet material</b>	acrylic glass, cover position adjustable
<b>Insulation withstand</b>	pulse 1.2/50 $\mu$ s up to 36 kV
<b>Weight</b>	8.5 kg
<b>Dimensions</b>	43.5 x 47 x 25.4 cm
<b>Included</b>	control cable to generator
<b>Requires</b>	MIG generator up to 36 kV



### TC-ST-HL

<b>Standard</b>	multiple
<b>Application</b>	test cabinet for heavy EUTs, with safety circuit
<b>Position of test cabinet</b>	near the generator
<b>EUT volume</b>	20 x 20 x 30 cm
<b>Warning lamps</b>	red and green (2 lamps)
<b>Test cabinet material</b>	acrylic glass, cover position adjustable
<b>Insulation withstand</b>	pulse 1.2/50 $\mu$ s up to 36 kV
<b>Weight</b>	8.5 kg
<b>Dimensions</b>	43.5 x 47 x 25.4 cm
<b>Included</b>	control cable to generator
<b>Requires</b>	MIG generator up to 36 kV



### WARNING-LAMP

<b>Cable length</b>	5 m
<b>Dimensions</b>	diameter 7x cm x 25 cm
<b>Weight</b>	0.5 kg



# NOTES

# Tradition meets Technology

Over 25 years devoted to combining  
latest technologies into the best products.



**100% Swiss made products**



EMC PARTNER

# PRODUCT APPLICATION RANGE

## CONSUMER & INDUSTRIAL ELECTRONICS

Transient Test Systems for conducted EMC tests on electronic equipment. ESD, EFT, surge, ring wave, DOW, dips, magnetic field, common and differential mode. Compliant to IEC, EN and ANSI standards.



## AEROSPACE ELECTRONICS

Impulse generators and couplers for avionic applications. Single stroke, multiple stroke and multiple burst according to RTCA / DO-160, EUROCAE / ED-14 and aircraft manufacturer standards.



## COMPONENT TESTING

Voltage and current Impulse generators for design and production testing of varistors, gas discharge tubes, surge protective devices, X / Y capacitors and specialist impulse generators for semiconductor tests.



## DEFENCE ELECTRONICS

Complete test solutions for MIL-STD-461 requirements CS06, CS106, CS115, CS116, CS117 and CS118.



## TELECOM & DATA LINE TESTING

Voltage and current impulse generators, CDNs, power contact, power induction equipment for exchange and customer equipment according to ITU, IEC, EN and ETSI requirements.



## ENERGY & UTILITY EQUIPMENT

High current CDNs combined with transient test equipment fulfil requirements to test renewable and classical energy distribution network and monitoring equipment.



## CUSTOMER SERVICES

Customer support throughout an equipment's lifetime is central to the EMC PARTNER AG philosophy. Directly from our ISO accredited facility in Switzerland or through our network of services centres, we provide support wherever you are.



For further information please do not hesitate to contact your local EMC PARTNER AG representative.  
Visit our website for more information and contact details.

# [www.emc-partner.com](http://www.emc-partner.com)



## Swiss Headquarters

EMC PARTNER AG  
Baselstrasse 160  
CH - 4242 Laufen

Phone +41 61 775 20 30  
Fax +41 61 775 20 59  
Email [sales@emc-partner.ch](mailto:sales@emc-partner.ch)  
Web [www.emc-partner.com](http://www.emc-partner.com)

## Your local representative

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