

# **axos<sup>5</sup>** EXPANDABLE TEST SYSTEM

## COMPACT IMMUNITY TEST SYSTEM



SURGE



EFT / BURST



VOLTAGE DIPS



MAGNETIC FIELD



[www.axos.haefely.com](http://www.axos.haefely.com)



## SUMMARY

### COMPACT IMMUNITY TEST SYSTEM

The new AXOS<sup>5</sup> compact immunity test system integrates all of the best features of our stand alone test systems into one single economic solution.

It combines 5 kV Burst/EFT, Surge combination wave, AC/DC Dips & Interrupts, along with an integrated single-phase coupling / decoupling network into one compact test system.

This allows quick and completely automated testing to the most common IEC, EN, ANSI, IEEE and UL standards.

AXOS<sup>5</sup> can either be operated via front panel by large colour graphic interface or remotely from the PC.

The easy to use menu together with the availability of predefined test routines for different standards makes testing easy and reliable, even for less frequently users.

Numerous additional functions such as external start/stop function allows easy integration of the test system also in customer specific test environments.

All the test parameters can be varied in a broad range wide above the requirements of the standards. Together with the ability of changing test parameters during test, AXOS<sup>5</sup> is not only the ideal product for compliance and pre-compliance testing, it is useful for monitoring & debugging function during design phase as well.

A wide range of cost-efficient and user friendly coupling / decoupling networks for power lines as well as for symmetrical and asymmetrical data- and signal lines are available as options.

## OVERVIEW

### FEATURES & BENEFITS

- Easy to operate with manual and automated test modes, software assisted test preparation, pre-defined test routines and visual aided test setups
- Economic & Efficient  
Touch screen guarantees reduction of time and effort - Experience and know-how at a reasonable price
- Safe and reliable operation by using safety interlock, warning lamp and emergency stop functions
- Voltage and current monitoring of surge impulses and EUT power provides valuable feedback to the test engineer
- Automatic generation of test report, including test parameters, test setup and test result

### APPLICATIONS

- Compliance & pre-compliance testing of electrical products
- CE marking
- Product development and debugging
- Compliance testing of telecom and wireless devices

### STANDARDS

- IEC/EN 61000-4-4 EFT / Burst Ed 2&3
- IEC/EN 61000-4-5 Surge Edition 2
- Upcoming EC/EN 61000-4-5 Surge Edition 3
- IEC/EN 61000-4-9 Imp Magnetic Field
- IEC/EN 61000-4-11 AC Dip and Interrupt
- IEC/EN 61000-4-29 DC Dip and Interrupt
- IEC/EN 61000-6-1 Generic Residential
- IEC/EN 61000-6-2 Generic Industrial
- IEC/EN 60335-1 Household
- IEC/EN 60601-1 Medical

### INDUSTRIES

- Industrial
- Residential
- Components
- Medical
- Renewable energy
- Telecom

## TECHNICAL SPECIFICATIONS

GENERAL DATA			
<b>Control power</b>	85 V - 264 V 50/60 Hz	<b>Dimensions (W x H x D)</b>	19" / 4U (45 x 18 x 49 cm)
<b>User test storage</b>	unlimited	<b>Weight</b>	25 kg
<b>Remote interface</b>	Ethernet, RJ45	<b>USB</b>	for USB memory stick
<b>Display</b>	7" / 800x480 / 24 bit with touch-screen	<b>AUX. interface</b>	D-sub 37p for external CDN, external transformer etc.
<b>External trigger input</b>	5 VTTL	<b>Synch input</b>	BNC, 10 V – 264 V AC
<b>Trigger output</b>	5 VTTL	<b>External start / stop input</b>	5 VTTL, starts / stops predefined test sequence
<b>EUT failed input</b>	5 VTTL	<b>Analog output</b>	0 – 10 V, for use with external options
<b>Warning lamp output</b>	2 x 24 V / 1 A DC	<b>Safety circuit</b>	stops the test when unlocked

IEC / EN 61000-4-4 EDITION 2 & 3 EFT / BURST			
<b>Output voltage</b>	0.2 – 5.0 kV $\pm 10\%$ at co- axial output	<b>Spike frequency</b>	1 Hz – 1 MHz
<b>Polarity</b>	pos / neg / alternate	<b>Burst duration</b>	10 $\mu$ s – 1 s
<b>Output impedance</b>	50 Ohms	<b>Burst period</b>	1 ms – 10 s
<b>Rise time</b>	5 ns $\pm 30\%$	<b>Test time</b>	1 s– 1000 minutes
<b>Impulse duration</b>	50 ns $\pm 30\%$ at 50 Ohm 50 ns –15 +100 ns at 1000 Ohm	<b>Trigger</b>	automatic, manual, external trigger input
<b>Burst mode</b>	normal, continuous, real, random	<b>Integrated single phase coupling / decoupling network</b>	264 V AC / 16 A 220 V DC / 10 A

<b>IEC / EN 61000-4-5 EDITION 2 SURGE COMBINATION WAVE</b>			
<b>Output voltage</b>	0.2 – 5.0 kV $\pm 10\%$	<b>Output current</b>	0.1 – 2.5 kA $\pm 10\%$
<b>Voltage rise time</b>	1.2 $\mu\text{s}$ $\pm 30\%$	<b>Current rise time</b>	8 $\mu\text{s}$ $\pm 20\%$
<b>Voltage duration</b>	50 $\mu\text{s}$ $\pm 20\%$	<b>Current duration</b>	20 $\mu\text{s}$ $\pm 20\%$
<b>Polarity</b>	pos / neg / alternate	<b>Integrated single phase CDN</b>	264 V AC / 16 A 220 V DC / 10 A
<b>Output impedance</b>	2 Ohms	<b>Impulse trigger</b>	automatic 2 s – 100 min manual external trigger input
<b>Phase sync</b>	0 – 359° with 1° steps or asynchronous mode		
<b>Counter preselect</b>	1 – 1000 / infinite		
<b>Counter</b>	100000		
<b>Peak voltage monitor</b>	BNC output: 1000:1 display: 3 digits	<b>Peak current monitor</b>	BNC output: 1 kA/V display: 3 digits

<b>IEC / EN 61000-4-11 EDITION 2 AND IEC / EN 61000-4-29 DIPS &amp; INTERRUPTS</b>			
<b>Max. voltage</b>	264 V AC/DC	<b>Interrupt time</b>	0.5 period – 800 periods 100 $\mu\text{s}$ – 1000 minutes
<b>Max. current</b>	16 A AC/DC continuous 20 A for 5 s 23 A for 3 s 40 A for 3 s > 500 A inrush current	<b>Interval time</b>	1 period – 800 periods synch 100 $\mu\text{s}$ – 1000 minutes asynch
<b>Trigger</b>	automatic manual external trigger input	<b>Test time</b>	1 s – 1000 minutes infinite
<b>Interrupt dip level</b>	0% 0% – 99% with external voltage source	<b>Phase sync</b>	0 – 359° 16 / 40 / 50 / 60 Hz asynchronous mode

## SCOPE OF SUPPLY – OPTIONS & ACCESSORIES

### SCOPE OF SUPPLY AXOS<sup>5</sup> 2490400

Qty. 1	Immunity Test System AXOS <sup>5</sup>
Qty. 1	Mains Cable
Qty. 1	User Manual
Qty. 1	Certificate of Calibration

### OPTIONS AND ACCESSORIES

FP-EFT 32M	Manual 3-Phase / 32 A CDN EFT/Burst	2490170
FP-EFT 100M2	3-Phase / 100 A Power Line CDN EFT	2495860
IP4A	Capacitive Coupling Clamp for EFT	2491300
FP-SURGE 100M2	3-Phase / 100 A Power Line CDN SURGE	2490180
PCD 121	Symmetrical Data & Control Line Coupler	2498010
PCD 126A	Asymmetrical Data & Control Line Coupler	2498030
DEC 5	Symmetrical Data & Control Line Decoupler	2490141
DEC 6	Symmetrical Data & Control Line Decoupler	2490151
DEC 7	Asymmetrical Data & Control Line Decoupler	2490161
DIP 116	Automatic Dips Transformer 16 A 40/70/80%	2490410
MSURGE-A	Magnetic Field Test IEC / EN 61000-4-9	2490441
VTM 15000	Isolation Test 1.2/50 us up to 10 kV	2499960
VTM 15000/05	Voltage transformer multiplier 0.5 Joule	2499692
PDP 8000	HV differential Probe 1000:1 for Surge	2499911
CP 101	Current Probe Model for Surge	2499931
ES	External emergency stop Switch P12	4700751
WL	External warning Lamp P12	4700750
Calibration	Accredited Calibration AXOS <sup>5</sup>	2490420

## ***AXOS – PERFECTION. DELIVERED.***

### **FEATURES**

- 7" / 800 x 480 / 24 bit touch-screen
- Reduction of daily working effort due to easy access menu structure
- Intuitive menu prompting
- Multilingual menus (English, German, French)
- Ethernet and USB connectivity



DIP 116 Dips Transformer



AXOS<sup>5</sup> & DIP 116 Dips Transformer



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