

ODEN A

Primary current injection test system



- **Portable modular system**
- **Broad application range**
- **Up to 8 kA output**

Description

A powerful test system designed for primary injection testing of protective relay equipment and circuit breakers. It is also used to test the transformation ratio of current transformers and for other applications that require high variable currents. Up to 8 kA can be generated.

The ODENT^{MA} system consists of a control unit together with one or two current units. All parts are portable, and ODEN A can be quickly assembled and connected. There are two versions of the current unit: S and X, S and X are identical except that X has an additional 30/60 V output.

Application

ODEN A can be used in a number of applications where high current is required:

- **Primary current injection testing of protective systems**
- **Circuit breaker testing**
- **Testing current transformers**
- **Heat runs**
 - ▶ Example of test objects are joints, circuit breakers and disconnectors.
- **Testing of safety-ground devices**
 - ▶ Personal safety grounds must be tested at rated current, a task for which ODEN A is well suited.
- **Testing integrity of ground grids**
 - ▶ One way to make this test is by injecting current between a reference ground and the ground to be tested and measuring the voltage drop and the percentage of current flowing through the ground grid. The type X current unit included with ODEN A is designed for this type of application.

Specifications

Specifications are valid at nominal input voltage and an ambient temperature of +25°C, (77°F). Specifications are subject to change without notice.

System designation

An ODEN A-system consists of a control unit and one or two current units. There are two different versions of the current units: S-unit (standard) and X-unit (extra 30/60 V outlet). The system designation indicates the number and version of current units included.

Example: ODEN A/2X

- X = Version of current unit (S, or X)
- 2 = Number of current units

Environment

Application field The instrument is intended for use in high-voltage substations and industrial environments.

Temperature
Operating -20°C to +50°C (-4°F to +122°F)
Storage & transport -40°C to +55°C (-40°F to +127°F)
Humidity 5% – 95% RH, non-condensing

CE-marking

EMC 2004/108/EC
LVD 2006/95/EC

General

Mains voltage 240/400 V AC, 50/60 Hz
Mains inlet IEC 60309-2, 63 A
Input current Output current x open circuit voltage / input voltage

Dimensions

Control unit A 570 x 310 x 230 mm
 (22.4" x 12.2" x 9")
Current unit S, X 570 x 310 x 155 mm
 (22.4" x 12.2" x 6")
Complete with cart 690 x 350 x 860 mm
 (27.2" x 13.8" x 33.9")

Weight

Control unit A 20 kg (44.1 lbs)
Current unit S 42 kg (92.6 lbs)
Current unit X 45 kg (99.3 lbs)
Cart 11 kg (24.3 lbs)

Outputs

ODEN A, 240 V mains voltage, 50 / 60 Hz					
		Open circuit voltage	Max. continuous current ³⁾	Max. current, 3 minutes ³⁾	Max. current, 1 sec ³⁾
ODEN A/1S					
		6 V	1000 A	2000 A	6000 A
ODEN A/2S					
	1)	6 V	1680 A	3600 A	8000 A
	2)	12 V	1000 A	2000 A	4000 A
ODEN A/1X					
High current output		6 V	1000 A	2000 A	6000 A
Output 0 – 30/60 V					
30 V range		30 V	160 A	300 A	600 A
60 V range		60 V	80 A	150 A	300 A
ODEN A/2X					
High current output	1)	6 V	1680 A	3600 A	8000 A
	2)	12 V	840 A	1500 A	4000 A
Output 0 – 30/60 V					
30 V range	1)	30 V	320 A	600 A	1200 A
30 V range	2)	60 V	160 A	300 A	600 A
60 V range	2)	120 V	80 A	150 A	300 A
ODEN A, 400 V mains voltage, 50 / 60 Hz					
		Open circuit voltage	Max. continuous current ³⁾	Max. current, 3 minutes ³⁾	Max. current, 1 sec ³⁾
ODEN A/1S					
		6 V	1000 A	2000 A	7000 A
ODEN A/2S					
	1)	6 V	1900 A	4000 A	8000 A
	2)	12 V	630 A	1500 A	4000 A
ODEN A/1X					
High current output		6 V	1000 A	2000 A	7000 A
Output 0 – 30/60 V					
30 V range		30 V	160 A	300 A	600 A
60 V range		60 V	80 A	150 A	300 A
ODEN A/2X					
High current output	1)	6 V	1900 A	4000 A	8000 A
	2)	12 V	630 A	1500 A	4000 A
Output 0 – 30/60 V					
30 V range	1)	30 V	250 A	600 A	1200 A
30 V range	2)	60 V	125 A	225 A	600 A
60 V range	2)	120 V	60 A	115 A	300 A

1) Current units connected in parallel

2) Current units connected in series

3) Maximum possible current is also limited by the impedance in the test circuit. The current value can not exceed output voltage / impedance value.

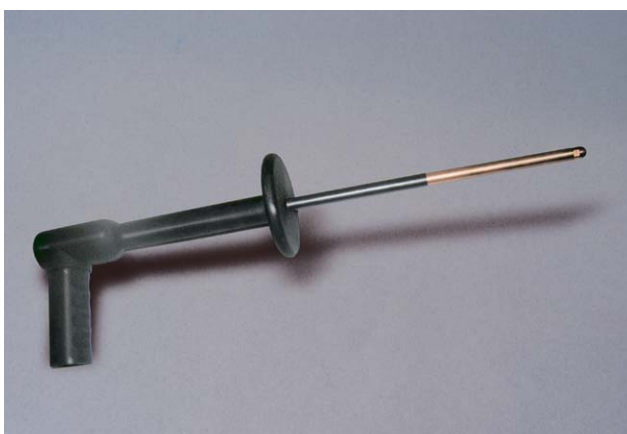
Optional accessories



Timer TM200



Multi-cable high current cable set 6 x 120 mm²
Low-impedance multi-cable sets for higher output current. Available with 2, 3, 4 or 6 parallel cables, and in lengths of 0.5, 1.0, 1.5 or 2 meters.
Cable sets
See Ordering Information.



HCP2000 - High Current Probe
The high current probe, HCP2000, is a tool that makes it possible to test Molded Case Circuit Breakers (MCCB), without removing/uninstalling the circuit breaker. The high current probe operates up to 2000 A trip current.



Cable application



High Current Serial Bar
For serial connecting of ODEN current units.



High current parallel bars
The parallel bars can be used when up to three current units are connected in parallel.

Ordering information

Item	Art. No.	Item	Art. No.
<p>A cart (Art.No. 50-00092) is always included with purchase of a complete ODEN system. The cable set(s) for connection to the object under test must however be stated as a separate item in the order. High current serial bar for connecting current units in series is included with purchase of two current units.</p>			
ODEN A/1S		Multi-cable high current cable sets	
240 V Mains voltage	BH-32411	Length	Impedance <i>(Twisted-pair cables)</i>
400 V Mains voltage	BH-34011	Cross section area: 240 mm ² (2x120)	
ODEN A/2S		2 x 0.5 m (1.6 ft)	0.21 mΩ GA-12205
240 V Mains voltage	BH-32412	2 x 1 m (3.3 ft)	0.32 mΩ GA-12210
400 V Mains voltage	BH-34012	2 x 1.5 m (4.9 ft)	0.42 mΩ GA-12215
ODEN A/1X		2 x 2 m (6.6 ft)	0.53 mΩ GA-12220
240 V Mains voltage	BH-32421	Cross section area: 360 mm ² (3x120)	
400 V Mains voltage	BH-34021	2 x 0.5 m (1.6 ft)	0.18 mΩ GA-12305
ODEN A/2X		2 x 1 m (3.3 ft)	0.25 mΩ GA-12310
240 V Mains voltage	BH-32422	2 x 1.5 m (4.9 ft)	0.32 mΩ GA-12315
400 V Mains voltage	BH-34022	2 x 2 m (6.6 ft)	0.39 mΩ GA-12320
Optional accessories		Cross section area: 480 mm ² (4x120)	
HCP2000	AA-90165	2 x 0.5 m (1.6 ft)	0.16 mΩ GA-12405
TM200		2 x 1 m (3.3 ft)	0.21 mΩ GA-12410
External timer		2 x 1.5 m (4.9 ft)	0.27 mΩ GA-12415
See the TM200 for more information	BE-29090	2 x 2 m (6.6 ft)	0.32 mΩ GA-12420
Current Transformer Switchbox	BH-90130	Cross section area: 720 mm ² (6x120)	
High Current Serial Bar	BH-90102	2 x 0.5 m (1.6 ft)	0.14 mΩ GA-12605
High Current Parallel Bars, 2 pcs		2 x 1 m (3.3 ft)	0.18 mΩ GA-12610
Weight: 3 kg	BH-90171	2 x 1.5 m (4.9 ft)	0.21 mΩ GA-12615
		2 x 2 m (6.56 ft)	0.25 mΩ GA-12620
		Cable set, 2 x 5 m (16 ft), 120 mm²	
		Cross section area: 120 mm ²	
		Weight: 15.2 kg (33.5 lbs)	
		Impedance: 2.2 mΩ GA-12052	
		Cable set, 2 x 5 m (16 ft), 25 mm²	
		Cross section area: 25 mm ²	
		For the 30/60 V output of current unit X. GA-	
		Weight: 4 kg (8.8 lbs) 02052	