



The 750-495 3-Phase Power Measurement Module allows measurement of electrical data in a three-phase supply network.

The voltage is measured via network connection to L1, L2, L3 and N.

The current of the three phases is fed to I1, I2, I3 and IN (two clamping points each +,-) via current transformers or via Rogowski coils for the 750-495/000-002 Module.

The 3-phase power measurement module transmits all metrics (e.g., reactive/apparent/effective power, energy consumption, power factor, phase angle, frequency, over-/undervoltage) directly to the process image, without requiring high computing power from the controller. Both comprehensive metrics and harmonic analysis up to the 41st harmonic permit extensive network analysis via the fieldbus. These metrics enable the operator to optimize supply to a drive or machine, protecting the system from damage and failure. Insulation failures can be detected and prevented via current measurement performed in the neutral conductor. The four-quadrant display indicates the load type (inductive, capacitive) and whether it is an energy consumer or producer.

### Technical data

Number of measurement inputs	7 (3 voltage measurement inputs, 4 differential current measurement inputs)
Signal type	Power measurement
Signal form	Sinusoidal signals (taking the cutoff frequency into account)
Resolution [bit]	24 bits
Data width	2 x 128-bit data; 2 x 64-bit control/status
Voltage path input resistance (typ.)	1429 kΩ
Current path input resistance (typ.)	22 kΩ
Reference for measurement error	AC current/voltage
Measurement error (reference temperature)	23 °C
Measurement error, deviation (max.) from the upper-range value	0.5 %
Measurement current (max.)	Secondary voltages of Rogowski coils up to 88 mV

## Technical data

Measurement cycle time	Adjustable for arithmetic mean value, Min_Max_Values
Frequency range (mains frequency)	50/60 Hz
Frequency range (harmonics analysis)	0 ... 3300 Hz
Limit frequency	15.9 kHz
Permissible common mains supply systems	Three-phase, four-wire system: max. 277/480 VAC; Three-phase, three-wire system: max. 600 VAC (UL)
Note on common mains supply systems	U <sub>LL</sub> up to 690°V is possible under special conditions (see manual).
Upper-range value for the measurement accuracy	400/690 V
Calculated values	Line-to-line voltage, power output, energy, power factors, mains frequency, harmonic analysis (up to the 41st harmonic), THD
Measurement method	True RMS measurement
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	100 mA
Indicators	LED (A) green: Communication; LED (B-G) red: Error L1, Override in Current Measurement Path (display), Undervoltage in Voltage Measurement Path (display), Error L2, Error L3, Override in Voltage Measurement Path (display); LED (H) yellow: Interchange in Phase Sequence L1-L2-L3

## Safety and protection

Measurement category per EN/UL 61010-2-030	CAT III
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<b>Test voltage</b>	
Test voltage	3.51 kVAC, 50/60 Hz, 1 min.
Rated impulse withstand voltage	System/field side: 5.0 kV (EN 60870-2-1 / Class VW3) 6.4 kV (EN/UL 61010-1)

### Insulation coordination per EN/UL 61010-2-201 with N connection

System voltage	≤ 300 V
Note on system voltage	The system voltage corresponds to the line-to-neutral voltage derived from conventional mains power supply systems.
Overvoltage category	III
Insulation type	Reinforced insulation

### Insulation coordination per EN/UL 61010-2-201 without N connection

System voltage	≤ 600 V
Note on system voltage	To ensure safe insulation, the module's N connector must not be connected. The system voltage corresponds to the line conductor/neutral conductor voltage, which was derived from standard power supply systems
Overvoltage category	III
Insulation type	Double isolation (basic isolation and supplementary isolation by impedance/current measurement transformer) Safe isolation from the adjacent SELV/PELV modules must be ensured. The product manual contains the types of isolation to adjacent modules in section "Isolation to Adjacent I/O Modules per EN/UL 61010 2-201." Without double or reinforced isolation, the 750-495/000-00x Power Measurement Module must not be placed directly next to SELV/PELV modules. Under such conditions, the 750-616 Distance Module must be used.

## Connection Data

Connection technology: I/O	12 x CAGE CLAMP®
Connectable conductor materials	Copper
Connection type	Inputs/outputs
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches
Note (conductor cross-section)	Solid conductor: 20 ... 14 AWG (UL); Fine-stranded conductor: 20 ... 16 AWG (UL) These values refer exclusively to the mechanical connection capacity of the clamping points. When the applications/devices are operated in locations covered by UL, only solid conductor with 20 ... 14 AWG and fine-stranded conductor with 20 ... 16 AWG are permitted.

### Physical data

Width	24 mm / 0.945 inches
Height	100 mm / 3.937 inches
Depth	67.8 mm / 2.669 inches
Depth from upper-edge of DIN-rail	60.6 mm / 2.386 inches

### Mechanical data

Mounting type	DIN-35 rail
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### Material data

Housing material	Polycarbonate; polyamide 6.6
Fire load	1.36 MJ
Weight	98.1 g
Conformity marking	CE

### Environmental requirements

Ambient temperature (operation)	0 ... +55 °C
Ambient temperature (storage)	-40 ... +85 °C
Protection type	IP20
Pollution degree	2 per EN 60664-1
Operating altitude	0 ... 2000 m / 0 ... 6562 ft
Mounting position	Horizontal left, horizontal up, vertical top and vertical bottom
Relative humidity (without condensation)	95 %
Vibration resistance	4g per IEC 60068-2-6
Shock resistance	15g per IEC 60068-2-27
EMC immunity to interference	per EN 61000-6-2
EMC emission of interference	per EN 61000-6-3
Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Permissible H <sub>2</sub> S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO <sub>2</sub> contaminant concentration at a relative humidity 75 %	25 ppm

### Commercial data

PU (SPU)	1 pcs
Packaging type	Box
Country of origin	DE
GTIN	4050821841593
Customs tariff number	85389099990

### Product Classification

UNSPSC	41113630
eCl@ss 10.0	27-24-26-05
eCl@ss 9.0	27-24-26-05
ETIM 9.0	EC001596
ETIM 10.0	EC001596
ECCN	NO US CLASSIFICATION

**Environmental Product Compliance**

CAS-No.	1303-86-2 1317-36-8 7439-92-1
REACH Candidate List Substance	Diboron trioxide Lead Lead monoxide
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Bulgaria)	e83add9f-a08c-482e-b2f1-fe61968b9c7b
SCIP notification number (Czech Republic)	845c8c1a-bd89-471a-9229-b5af9b6b4696

**Approvals / Certificates**

General approvals			Declarations of conformity and manufacturer's declarations		
Approval	Standard	Certificate Name	Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 004/2011	EAC CoC 03080	EU-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03083	UK-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-
KC National Radio Research Agency	Article 58-2, Clause 3	MSIP-REM-W43-AIM750			
UL Underwriters Laboratories Inc. (ORDINARY LOCATI- ONS)	-	E175199			

**Approvals for marine applications**

Approval	Standard	Certificate Name
BSH Bundesamt fuer See- schifffahrt und Hydrogra- phie	-	1104
RINA RINA Germany GmbH	-	ELE343521XG001

**Approvals for hazardous areas**

Approval	Standard	Certificate Name
UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS)	UL 121201	E198726

## Downloads

### Environmental Product Compliance

#### Compliance Search

Environmental Product Compliance  
750-495/000-002



## Documentation

### Manual

System Manual Series  
750/753



Product Manual 3-Phase Power Measurement Module

V 1.3.0  
06.04.2023

pdf  
18495.39 KB



### System Description

750/753 Series I/O-System – General Product Information

pdf  
953.35 KB



Overview on WAGO-I/O-SYSTEM 750 approvals

pdf  
770.48 KB



### Bid Text

750-495/000-002

20.10.2017

doc  
30.50 KB



750-495/000-002

19.02.2019

xml  
6.41 KB



## CAD/CAE-Data

### CAD data

2D/3D Models  
750-495/000-002



### CAE data

EPLAN Data Portal  
750-495/000-002



WSCAD Universe  
750-495/000-002



ZUKEN Portal  
750-495/000-002



## Runtime Software

### Firmware

0750-0495, 3-Phasen-Leistungsmessung

V 03  
07.06.2022

zip  
174.07 KB



**Libraries**

Library			
Function block description	PowerMeasure-ment_495_02.lib	2.1.0 23.01.2017	zip 1579.43 KB

**1 Compatible Products**

**1.1 Optional Accessories**

**1.1.1 Current transformer**

**1.1.1.1 Current transformer terminal block**



**Item No.: 2007-8874**  
Compact terminal block; for current and voltage transformers; 6,00 mm<sup>2</sup>; multicoloured

**Item No.: 2007-8877**  
Compact terminal block; for current transformer circuit; 6,00 mm<sup>2</sup>; multicoloured

**1.1.1.2 Rogowski coil**



**Item No.: 855-9450/2000-1251**  
Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length 4.5 m; Feedthrough for measurement conductor 125 mm

**Item No.: 855-9450/2000-1751**  
Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length 4.5 m; Feedthrough for measurement conductor 175 mm

**Item No.: 855-9450/2000-701**  
Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length 4.5 m; Feedthrough for measurement conductor 70 mm

**Item No.: 855-9150/2000-1251**  
Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length: 1.5 m; Feedthrough for measurement conductor 125 mm



**Item No.: 855-9150/2000-1751**  
Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length: 1.5 m; Feedthrough for measurement conductor 175 mm

**Item No.: 855-9150/2000-701**  
Rogowski coil; Primary rated current 1000 A; Output signal 22.5 mV per kA; Cable length: 1.5 m; Feedthrough for measurement conductor 70 mm

**1.1.2 DIN-rail**

**1.1.2.1 Mounting accessories**



**Item No.: 210-196**  
Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored

**Item No.: 210-198**  
Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored

**Item No.: 210-197**  
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored

**Item No.: 210-114**  
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



**Item No.: 210-118**  
Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored

**Item No.: 210-112**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored

**Item No.: 210-113**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored

### 1.1.3 Marking

#### 1.1.3.1 Group marker carrier



**Item No.: 750-107**  
Group marker carrier

#### 1.1.3.2 Marker

**Item No.: 2009-145/000-006**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue

**Item No.: 2009-145/000-007**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray

**Item No.: 2009-145/000-023**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green

**Item No.: 2009-145/000-012**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange

**Item No.: 2009-145/000-005**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red

**Item No.: 2009-145/000-024**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet

**Item No.: 2009-145**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

**Item No.: 2009-145/000-002**  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow



**Item No.: 248-501/000-006**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue

**Item No.: 248-501/000-007**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray

**Item No.: 248-501/000-023**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green

**Item No.: 248-501/000-017**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green



**Item No.: 248-501/000-012**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange

**Item No.: 248-501/000-005**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red

**Item No.: 248-501/000-024**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet

**Item No.: 248-501**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white



**Item No.: 248-501/000-002**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow

#### 1.1.3.3 Marker carrier



**Item No.: 750-103**  
Group marker carrier

### 1.1.4 Power tap

#### 1.1.4.1 Power tap



**Item No.: 855-8003**  
Power tap; with fuse; 10 mm<sup>2</sup> (8 AWG) - 16 mm<sup>2</sup> (6 AWG); Phase

**Item No.: 855-8001**  
Power tap; with fuse; 2,5 mm<sup>2</sup> (12 AWG) - 6 mm<sup>2</sup> (10 AWG); Phase

**Item No.: 855-8004**  
Power tap; without fuse; 10 mm<sup>2</sup> (8 AWG) - 16 mm<sup>2</sup> (6 AWG); N-conductor

**Item No.: 855-8002**  
Power tap; without fuse; 2,5 mm<sup>2</sup> (12 AWG) - 6 mm<sup>2</sup> (10 AWG); N-conductor

## 1.1.5 Shield termination

### 1.1.5.1 Shield clamping saddles



**Item No.: 790-108**

Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 ... 8 mm



**Item No.: 790-208**

Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm



**Item No.: 790-116**

Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm



**Item No.: 790-216**

Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm



**Item No.: 790-124**

Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm



**Item No.: 790-220**

Shield clamping saddle; 30 mm wide; 6 ... 20 mm



**Item No.: 790-140**

Shield clamping saddle; diameter of compatible conductor

## 1.1.6 System enclosure

### 1.1.6.1 System enclosure



**Item No.: 850-825**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20



**Item No.: 850-826**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip



**Item No.: 850-827**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip



**Item No.: 850-828**

IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip



**Item No.: 850-826/002-000**

IP65 enclosure; Aluminium (RAL 7035); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip



**Item No.: 850-827/002-000**

IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip



**Item No.: 850-828/002-000**

IP65 enclosure; Aluminium (RAL 7035); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip



**Item No.: 850-834**

IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20



**Item No.: 850-835**

IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip



**Item No.: 850-836**

IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip



**Item No.: 850-814/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate



**Item No.: 850-815/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate



**Item No.: 850-816/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate



**Item No.: 850-817/002-000**

IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate