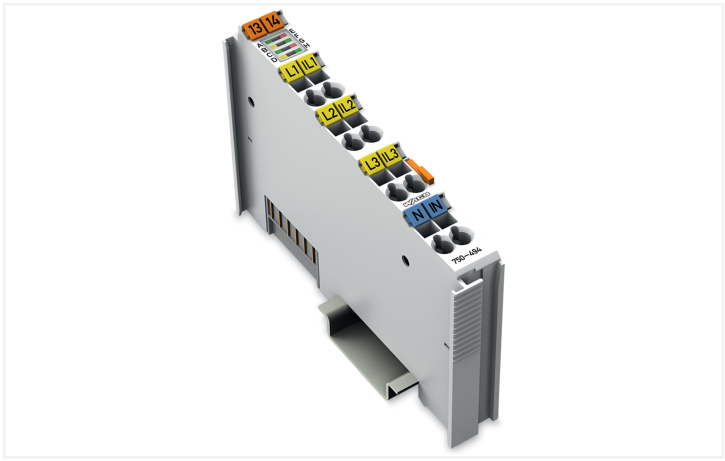
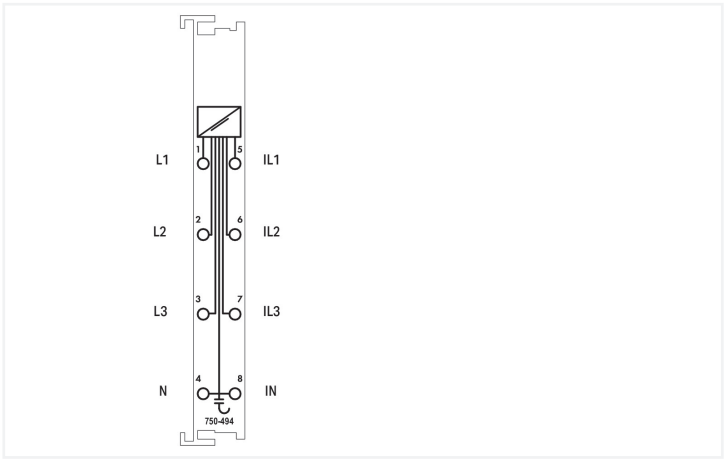
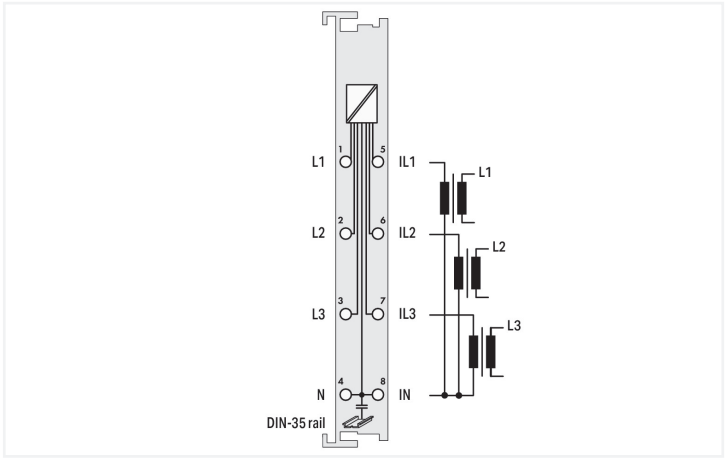
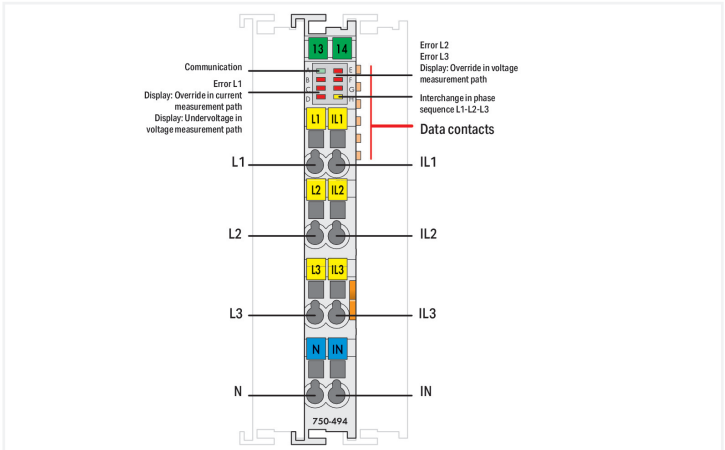
Data Sheet | Item Number: 750-494
3-Phase Power Measurement; 480 VAC, 1 A
https://www.wago.com/750-494





Color: light gray





The 750-494 3-Phase Power Measurement Module measures electrical data in a three-phase supply network.
The voltage is measured via network connection to clamping points L1, L2, L3 and N.
The current of the three phases is fed to IL1, IL2, IL3, and IN via current transformers.
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. 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	6 (3 voltage measurement inputs, 3 current measurement inputs)
Signal type	Power measurement
Input voltage (max.)	Current Inputs: 18 VAC
Signal form	Any periodic signals (considering the threshold frequencies)
Resolution [bit]	24 bits
Data width	2 x 128-bit data; 2 x 64-bit control/status
Voltage path input resistance (typ.)	1072 kΩ
Current path input resistance (typ.)	22 mΩ
Reference for measurement error	AC current/voltage
Measurement error (reference temperature)	25 °C
Measurement error, deviation (max.) from the upper-range value	0.5 %
Measurement current (max.)	1 A
Measurement cycle time	Adjustable for the arithmetic mean value, min./max. values
Frequency range (mains frequency)	45 … 65 Hz
Frequency range (harmonics analysis)	0 … 3300 Hz
Limit frequency	15.9 kHz

Technical data

Rated Voltage	U_{LN} = 277 VAC; U_{LL} = 480 VAC
Calculated values	Line-to-line voltage, power output, energy, power factors, mains frequency, harmonic analysis (up to the 41st harmonic), THD
Measurement components	Evaluating
Measurement method	True RMS measurement
Configuration options	WAGO-I/O-*CHECK* CODESYS Library ***e!****COCKPIT*
Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	100 mA
Isolation	4 kV system/field
Rated impulse withstand voltage	4 kV
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

Connection data

Connection technology: I/O	8 x CAGE CLAMP®
Connectable conductor materials	Copper
Connection type	Inputs/outputs
Solid conductor	0.08 … 2.5 mm² / 28 … 14 AWG
Fine-stranded conductor	0.08 … 2.5 mm² / 28 … 14 AWG
Strip length	8 … 9 mm / 0.31 … 0.35 inches

Physical data

Width	12 mm / 0.472 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

Material data

Color	light gray
Housing material	Polycarbonate; polyamide 6.6
Fire load	0.746 MJ
Weight	49.6 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	0 … +55 °C
Ambient temperature (storage)	-40 … +85 °C
Protection type	IP20
Pollution degree	2
Operating altitude	0 … 2000 m / 0 … 6562 ft
Mounting position	Horizontal left, horizontal right, horizontal top, horizontal bottom, 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

Continued on next page

Environmental requirements

Exposure to pollutants	per IEC 60068-2-42 and IEC 60068-2-43
Permissible H_2S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO_2 contaminant concentration at a relative humidity 75 %	25 ppm

Commercial data

Product Group	15 (I/O System)
PU (SPU)	1 pcs
Packaging type	Box
Country of origin	DE
GTIN	4050821548232
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 8.0	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)	1bec5928-bed4-4802-bc3f-c6a7da938b3c
SCIP notification number (Czech Republic)	be0c6abd-7f4b-4dbf-b3f4-f58e3fc68eee

Approvals / Certificates

General approvals

Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03083

Declarations of conformity and manufacturer's declarations

Approval	Standard	Certificate Name
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Continued on next page

Approvals for marine applications

Approval	Standard	Certificate Name
BSH Bundesamt fuer Seeschifffahrt und Hydrographie	-	1104
PRS Polski Rejestr Statków	-	TE/1101/880590/23
RINA RINA Germany GmbH	-	ELE343521XG001

Approvals for hazardous areas

Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV14ATEX148929X (II 3 G Ex ec IIC T4 Gc)
CCCEx CQST/CNEx	CNCA-C23-01	2020312310000213 (Ex ec IIC T4 Gc)
IECEx TUEV Nord Cert GmbH	IEC 60079-0	IECEx TUN 14.0035 X (Ex ec IIC T4 Gc)
INMETRO TÜV Rheinland do Brasil Ltda.	IEC 60079-0	TÜV 12.1297 X
UKEx WAGO GmbH & Co. KG	EN 60079-0	UKCA_WA GO22UKEX003X_ec

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 750-494			

Documentation

Manual

System Manual Series 750/753			
Product Manual 3-Phase Power Measurement Module	V 1.5.0 05.09.2024	pdf 4332.66 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

750-494	19.02.2019	xml 6.02 KB	
750-494	20.10.2017	doc 30.50 KB	
ausschreiben.de 750-494			

Instruction Leaflet

CCC Ex (Additional information)	26.04.2023	pdf 159.76 KB	

Application Notes

Application Note CoDeSys 2.3

Application Note for the 750-494 3-Phase Power Measurement Module	24.01.2014 11.11.2014	zip 1629.99 KB	

Application Note e!COCKPIT

e!COCKPIT Application Note WagoAppPowerMeasurement	2021-11-08 06.12.2021	pdf 930.71 KB	

Continued on next page

Application note SIEMENS			
WagoS7_PowerMeasurement_494 (a500610)	2.1.1 22.11.2017	zip 3046.47 KB	
WagoTIA_PowerMeasurement_494 (a500611)	1.0.1 22.11.2017	zip 6461.69 KB	

CAD/CAE-Data

CAD data
2D/3D Models 750-494

CAE data
EPLAN Data Portal 750-494
WSCAD Universe 750-494
ZUKEN Portal 750-494

Runtime Software

Firmware			
0750-0494, 3-Phasen-Leistungsmessung	V 06 07.06.2022	zip 179.63 KB	

Libraries

Library			
Bausteinbeschreibung für die PowerMeasurement_494_02.lib	4.1.2 23.06.2020	zip 1828.54 KB	

1 Compatible Products

1.1 Optional Accessories

1.1.1 Current transformer

1.1.1.1 Current transformer terminal block

Item No.: 2007-8873
Compact terminal block; for current and voltage transformers; 6,00 mm²; multicoloured

Item No.: 2007-8875
Compact terminal block; for current transformer circuit; 6,00 mm²; multicoloured

1.1.1.2 Plug-in current transformer

Item No.: 855-1700/032-000
Plug-in current transformer; Primary rated current 32 A; Secondary rated current 320 mA

Item No.: 855-301/100-201
Plug-in current transformer; Primary rated current: 100 A; Secondary rated current: 1 A; Rated power: 2.5 VA; Accuracy class: 1

Item No.: 855-501/1000-1001
Plug-in current transformer; Primary rated current: 1000 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Item No.: 855-801/1000-1001
Plug-in current transformer; Primary rated current: 1000 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Continued on next page

1.1.1.2 Plug-in current transformer

Item No.: 855-301/150-501
Plug-in current transformer; Primary rated current: 150 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1

Item No.: 855-601/1500-501
Plug-in current transformer; Primary rated current: 1500 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1

Item No.: 855-301/200-501
Plug-in current transformer; Primary rated current: 200 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1

Item No.: 855-801/2000-1001
Plug-in current transformer; Primary rated current: 2000 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Item No.: 855-301/250-501
Plug-in current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1

Item No.: 855-401/250-501
Plug-in current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1

Item No.: 855-1001/2500-1001
Plug-in current transformer; Primary rated current: 2500 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Item No.: 855-2701/035-001
Plug-in current transformer; Primary rated current: 35 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1

Item No.: 855-301/400-1001
Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Item No.: 855-501/400-1001
Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Item No.: 855-401/400-501
Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1

Item No.: 855-301/050-103
Plug-in current transformer; Primary rated current: 50 A; Secondary rated current: 1 A; Rated power: 1.25 VA; Accuracy class: 3

Item No.: 855-301/060-101
Plug-in current transformer; Primary rated current: 60 A; Secondary rated current: 1 A; Rated power: 1.25 VA; Accuracy class: 1

Item No.: 855-301/600-1001
Plug-in current transformer; Primary rated current: 600 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Item No.: 855-401/600-501
Plug-in current transformer; Primary rated current: 600 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Item No.: 855-501/600-1001
Plug-in current transformer; Primary rated current: 600 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

Item No.: 855-2701/064-001
Plug-in current transformer; Primary rated current: 64 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1

Item No.: 855-301/075-201
Plug-in current transformer; Primary rated current: 75 A; Secondary rated current: 1 A; Rated power: 2.5 VA; Accuracy class: 1

Item No.: 855-501/800-1001
Plug-in current transformer; Primary rated current: 800 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

1.1.1.3 Split-core current transformer

Item No.: 855-4001/100-001
Split-core current transformer; Primary rated current: 100 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m

Item No.: 855-3001/100-003
Split-core current transformer; Primary rated current: 100 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 3; Cable length: 3 m

Item No.: 855-5001/1000-000
Split-core current transformer; Primary rated current: 1000 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 5 m

Item No.: 855-5101/1000-000
Split-core current transformer; Primary rated current: 1000 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 5 m

Item No.: 855-4001/150-001
Split-core current transformer; Primary rated current: 150 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m

Item No.: 855-4001/200-001
Split-core current transformer; Primary rated current: 200 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 0.5; Cable length: 3 m

Item No.: 855-3001/200-001
Split-core current transformer; Primary rated current: 200 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m

Item No.: 855-4101/200-001
Split-core current transformer; Primary rated current: 200 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m

Item No.: 855-3001/250-001
Split-core current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m

Item No.: 855-4101/250-001
Split-core current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m

Item No.: 855-5001/250-001
Split-core current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 1; Cable length: 5 m

Item No.: 855-4101/400-001
Split-core current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m

Item No.: 855-5001/400-000
Split-core current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 5 m

Item No.: 855-3001/060-003
Split-core current transformer; Primary rated current: 60 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 3; Cable length: 3 m

Item No.: 855-5001/600-000
Split-core current transformer; Primary rated current: 600 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 5 m

Continued on next page

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.: 210-508
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-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.: 210-506
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; 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.: 210-115
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; 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.: 210-504
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; 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

Item No.: 210-505
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; 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

Continued on next page

1.1.3.3 Marker carrier

Item No.: 750-103
Group marker carrier

1.1.4 Potential distribution

1.1.4.1 Current and voltage tap

Item No.: 855-951/250-000
Current and voltage tap up to 95 mm²; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 0.5; fused

1.1.5 Power tap

1.1.5.1 Power tap

Item No.: 855-8003
Power tap; with fuse; 10 mm² (8 AWG) - 16 mm² (6 AWG); Phase

Item No.: 855-8001
Power tap; with fuse; 2,5 mm² (12 AWG) - 6 mm² (10 AWG); Phase

Item No.: 855-8004
Power tap; without fuse; 10 mm² (8 AWG) - 16 mm² (6 AWG); N-conductor

Item No.: 855-8002
Power tap; without fuse; 2,5 mm² (12 AWG) - 6 mm² (10 AWG); N-conductor

1.1.6 Shield termination

1.1.6.1 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

1.1.7 System enclosure

1.1.7.1 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

Continued on next page

1.1.7.1 System enclosure

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