Data sheet | Item number: 750-494/000-005

Power measurement; AC/DC 277V; external shunts

WAGO

Communication

Error L1

Display: Override in current measurement path

Display: Undervoltage in voltage measurement path

Error L2
Error L3
Display: Override in voltage measurement path

Interchange in phase sequence L1-L2-L3

Data contacts

13 14

L1 IL1

L1 IL1

L2 IL2

L2 IL2

L3 IL3

L3 IL3

N IN

N IN

750-494

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Item description

The 750-494/000-005 Power Measurement Module measures 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 IL1, IL2, IL3 and IN via external shunts.

The module transmits metrics (e.g., reactive/apparent/effective power, energy consumption, power factor, phase angle, frequency, over-/undervoltage) directly into 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.

Data
Technical data

Number of measurement inputs	6 (3 voltage measurement inputs*, 3 current measurement inputs*)
	*Only 2 voltage/current measurement inputs can be used for DC

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measurement!

Signal type	Power measurement
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.)	15 kΩ
Reference for measurement error	AC current/voltage
Measurement error (reference temperature)	25 °C
Measurement error, deviation (max.) from the upper-range value	0.5 %
Reference for measurement error (2)	AC current/voltage; DC measurement (2 channels only)
Measurement error, reference temperature (2)	25 °C
Measurement error, deviation (max.) of the upper-range value (2)	1 %
Measurement current (max.)	1 … 20,000 A via ext. shunts (DIN 43703, DIN EN 60051 (50 … 300 mV))
Measurement cycle time	Adjustable for 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
Rated voltage	V_{LN} = 277 V AC/DC; V_{LL} = 480 V AC
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
Isolation	4 kV system/field
Indicators	LED (A) green: Communication; LED (B-G) red: Error L1, Display: Override in current measurement path, Display: Undervoltage in voltage measurement path, Error L2, Error L3, Display: Override in voltage measurement path; LED (H) yellow: Interchange in phase sequence L1-L2-L3

Connection data

Connection technology: inputs/outputs	8 x CAGE CLAMP®
Connection type 1	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

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Physical data

Width	12 mm / 0.472 inches
Height	100 mm / 3.937 inches
Depth	69.8 mm

Mechanical Data

Mounting type	DIN-35 rail

Material Data

Housing material	Polycarbonate; polyamide 6.6
Fire load	0.955 MJ
Weight	63.7 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	0 … +55 °C
Ambient temperature (storage)	-25 … +85 °C
Protection type	IP20
Pollution degree	2
Operating altitude	0 … 2000 m / 0 … 6562 ft
Mounting position	horizontal (standing/lying); vertical
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_2S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO_2 contaminant concentration at a relative humidity 75 %	25 ppm

Commercial data

eCl@ss 10.0	27-24-26-05
eCl@ss 9.0	27-24-26-05

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ETIM 8.0	EC001601
ETIM 7.0	EC001601
PU (SPU)	1 pcs
Packaging type	box
Country of origin	DE
GTIN	4055143361057
Customs tariff number	85389099990

Environmental Product Compliance

RoHS Compliance Status	Compliant,No Exemption

Approvals / Certificates

General approvals
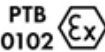
Logo	Approval	Additional Approval Text	Certificate name
	CCC CNEX	CNCA-C23-01	2020312310000213 (Ex ec IIC T4 Gc)
	EAC Brjansker Zertifizierungsstelle	TP TC 020/2011	EAC RU C-DE.AM02. B.00087/19
	UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 508	E175199 Sec.1

Approvals for marine applications

Logo	Approval	Additional Approval Text	Certificate name
	BSH Bundesamt fuer Seeschifffahrt und Hydrographie	-	1104
	PRS Polski Rejestr Statków	-	TE/2236/880590 /19
	RINA RINA Germany GmbH	-	ELE343521XG001

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Approvals for hazardous areas

Logo	Approval	Additional Approval Text	Certificate name
PTB 0102	**ATEX** TUEV Nord Cert GmbH	EN 60079-0	TUEV_14_ATEX_148929_X (II 3 G Ex ec IIC T4 Gc)
CCC	**CCC** CNEX	CNCA-C23-01	2020312310000213 (Ex ec IIC T4 Gc)
EAC Ex	**EAC** Brjansker Zertifizierungsstelle	TP TC 012/2011	EAC RU C-DE.AM02.B.00163 /19 (2Ex e IIC T4 Gc X)
IECEx	**IECEx** TUEV Nord Cert GmbH	IEC 60079-0	IECEx TUN 14.0035 X (Ex ec IIC T4 Gc)
INMETRO	**INMETRO** TÜV Rheinland do Brasil Ltda.	IEC 60079-0	BR-Ex_TÜV 12.1297 X
DEKRA 8505 UKEX	**UKEx** WAGO GmbH & Co. KG	EN 60079-0	UKCA_WAGO22UKEX003X_ec

Optional accessories

Carrier rail

Mounting accessories

	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	www.wago.com/210-197
	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	www.wago.com/210-198
	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	www.wago.com/210-504
	Item no.: 210-505 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715;	www.wago.com/210-505

Subject to changes. Please also observe the further product documentation!

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   www.wago.com/210-506

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   www.wago.com/210-508

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   www.wago.com/210-113

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   www.wago.com/210-118

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   www.wago.com/210-112

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   www.wago.com/210-114

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   www.wago.com/210-115

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   www.wago.com/210-196

Marking accessories

Marker carrier

Item no.: 750-103
Group marker carrier   www.wago.com/750-103

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   www.wago.com/2009-145/000-006

Item no.: 2009-145
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white   www.wago.com/2009-145

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   www.wago.com/2009-145/000-002

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   www.wago.com/2009-145/000-007

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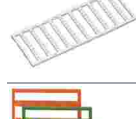Phone: +49571 887-0 | Fax: +49571 887-169
Email: info.de@wago.com | Web: www.wago.com
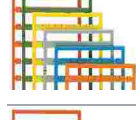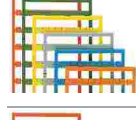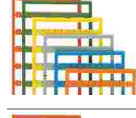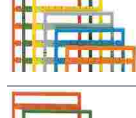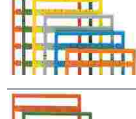
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	Item no.: 2009-145/000-005	
	Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red	www.wago.com/2009-145 /000-005
	Item no.: 2009-145/000-012	
	Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange	www.wago.com/2009-145 /000-012
	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	www.wago.com/2009-145 /000-023
	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	www.wago.com/2009-145 /000-024
	Item no.: 248-501/000-006	
	Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue	www.wago.com/248-501 /000-006
	Item no.: 248-501/000-007	
	Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray	www.wago.com/248-501 /000-007
	Item no.: 248-501/000-002	
	Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow	www.wago.com/248-501 /000-002
	Item no.: 248-501/000-012	
	Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange	www.wago.com/248-501 /000-012
	Item no.: 248-501	
	Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white	www.wago.com/248-501
	Item no.: 248-501/000-017	
	Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green	www.wago.com/248-501 /000-017
	Item no.: 248-501/000-005	
	Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red	www.wago.com/248-501 /000-005
	Item no.: 248-501/000-024	
	Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet	www.wago.com/248-501 /000-024

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

www.wago.com/248-501
/000-023

Group marker carrier

Item no.: 750-107
Group marker carrier

www.wago.com/750-107

Shield termination

Shield clamping saddles

Item no.: 790-116
Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm

www.wago.com/790-116

Item no.: 790-124
Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm

www.wago.com/790-124

Item no.: 790-108
Shield clamping saddle; 11 mm wide; diameter of compatible conductor; 3 ... 8 mm

www.wago.com/790-108

Item no.: 790-140
Shield clamping saddle; diameter of compatible conductor

www.wago.com/790-140

Item no.: 790-216
Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm

www.wago.com/790-216

Item no.: 790-220
Shield clamping saddle; 30 mm wide; 6 ... 20 mm

www.wago.com/790-220

Item no.: 790-208
Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm

www.wago.com/790-208

System housing

System enclosure

Item no.: 850-814/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate

www.wago.com/850-814
/002-000

Item no.: 850-815/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate

www.wago.com/850-815
/002-000

Item no.: 850-816/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate

www.wago.com/850-816
/002-000

Item no.: 850-817/002-000
IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate

www.wago.com/850-817
/002-000

Subject to changes. Please also observe the further product documentation!

	Item no.: 850-825	www.wago.com/850-825
	IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20	
	Item no.: 850-826	www.wago.com/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	www.wago.com/850-827
	IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	
	Item no.: 850-827/002-000	www.wago.com/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.: 850-826/002-000	www.wago.com/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.: 850-828/002-000	www.wago.com/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.: 850-828	www.wago.com/850-828
	IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip	
	Item no.: 850-834	www.wago.com/850-834
	IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20	
	Item no.: 850-835	www.wago.com/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	www.wago.com/850-836
	IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	

Downloads
Documentation

Manual

System Manual WAGO I/O System 750/753 Decentralized Automation Technology	V 3.3.0 2023 May 4	pdf 8.8 MB	Download
Product Manual 3-Phase Power Measurement Module AC/DC 277 V	V 1.0.0	pdf 4.8 MB	Download
System Manual Series 750/753 Online HTML		URL	Download

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Bid Text

750-494/000-005 X81 - Datei	2019 Feb 19	xml 6.6 kB	Download
750-494/000-005 doc - Datei	2017 Oct 20	doc 33.8 kB	Download

Instruction Leaflet

CCC Ex (Additional information) WAGO-I/O-SYSTEM *750-****/*	2023 Apr 26	pdf 163.6 kB	Download

System Description

750/753 Series I/O-System – General Product Information		pdf 1.7 MB	Download
Overview on WAGO-I/O-SYSTEM 750 approvals		pdf 789.0 kB	Download

Additional Information

Disposal and Recycling Electrical and electronic equipment, Batteries, Packaging	V 1.1.0 2022 Aug 18	pdf 2.2 MB	Download

Application Notes

Application Note e!COCKPIT

e!COCKPIT Application Note WagoAppPowerMeasurement This Application Note describes the use of the library WagoAppPowerMeasurement under different boundary conditions.	2021-11-08 2021 Dec 6	pdf 953.0 kB	Download

Libraries

Library

Bausteinbeschreibung für die PowerMeasurement_494_02.lib Bausteinbeschreibungen für die 3-Phasen-Leistungsmessklemme 750-494	4.1.2 2020 Jun 23	zip 1.9 MB	Download

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CAD/CAE-Data

CAD data

2D/3D Models 750-494/000-005	URL	Download

CAE data

EPLAN Data Portal 750-494/000-005	URL	Download
EPLAN Data Portal 750-494/000-005	URL	Download
ZUKEN Portal 750-494/000-005	URL	Download

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 750-494/000-005	URL	Download
Power measurement; AC/DC 277V; external shunts		

Installation Notes

Product family

WAGO I/O System 750/753
Show all products from the family