TECHDOCS

WAGO I/O System 750 XTR

Filter module for field-side power supply (surge); 24 VDC; higher isolation; extreme

750-624/040-000

Product manual
Valid as of HW version 02 | FW version --
2716077451 | 1 | en-US | 2025-11-12 10:37

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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

E-Mail: **documentation@wago.com**

Table of Contents

1 Provisions

1.1 Scope of Applicability

This document applies to the following product:

750-624/040-000 (Field Supply Filter 24 VDC HI XTR) Filter module for field-side power supply (surge); 24 VDC; higher isolation; extreme.

From hardware version	02
From firmware version	--
Product detail page	www.wago.com/750-624/040-000

Note

Note applicable documents!

The complete operating instructions for the product consists of several, applicable documents. The product must only be installed and operated in accordance with the complete operating instructions. Knowledge of all applicable documents is required for proper use. You can find all documents and information on the product detail page.

Applicable document

System Manual I/O System 750 XTR
- Provisions
- Safety
- Planning
- Transport and Storage
- Assembly and Disassembly
- Conductor Termination
- Decommissioning

2 Overview

The filter module is used for providing the supply voltage to a fieldbus node.

The filter module has blade contacts for receiving the potential for the field supply. The field supply can also be fed in from an external source via the CAGE CLAMP® connections. The filter module provides the 24 V field supply voltage for the field level to downstream I/O modules via its spring contacts.

The filter module contains overvoltage protection for the field supply voltage via the power jumper contacts.

A green status LED indicates the status of the operating voltage at the power jumper contacts.

This version of the filter module is NOT intended for use in station control technology, telecontrol technology, railway technology, or in marine-certified operation. For standard-compliant use, the version of the field supply filter without power contacts (Item No.: **750-624/040-001**) or the power supply filter (Item No.: **750-626/040-000**) must always be used for the I/O module groups.

3 Properties

3.1 View

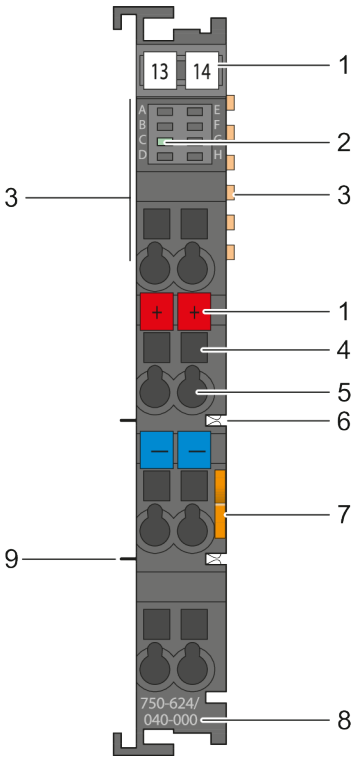

Figure 1: View

1	Slot for Mini-WSB (optional)	System Manual I/O System 750 XTR
2	Indicator	Indicators [▸ 7]
3	Data contacts	System Manual I/O System 750 XTR
4	Access to open the associated CAGE CLAMP® connection	System Manual I/O System 750 XTR
5	CAGE CLAMP® connection	Wiring Interface [▸ 7] and System Manual I/O System 750 XTR
6	Power jumper contacts (spring)	Power Jumper Contacts [▸ 8] and System Manual I/O System 750 XTR
7	Release tab	System Manual I/O System 750 XTR
8	Item number	Scope of Applicability [▸ 4]
9	Power jumper contacts (blade)	Power Jumper Contacts [▸ 8] and System Manual I/O System 750 XTR

3.2 Indicators

A green status LED indicates the status of the operating voltage at the power jumper contacts.

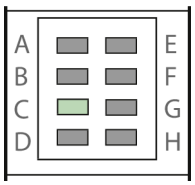

Figure 2: Indicator

Designation	LED	Status	Function
Status of the operating voltage – Power jumper contacts	C	Off	No 24 V operating voltage at the power jumper contacts
		Green	24 V operating voltage applied to the power jumper contacts

3.3 Wiring Interface

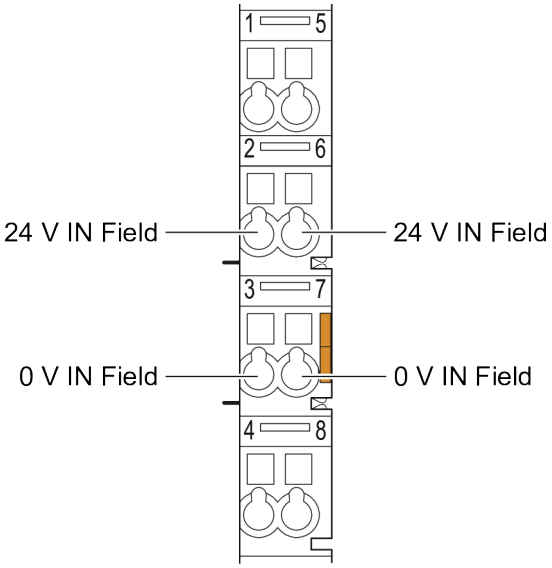

Figure 3: CAGE CLAMP® Connections

Name	Connection	Function
24 V IN, field	2	Feed-in, field supply, 24 VDC
	6	
0 V IN, field	3	Feed-in, field supply, 0 VDC
	7	

3.4 Power Jumper Contacts

The potential for the field supply is fed in via the blade contacts and passed on via the spring contacts.

For additional information on the Power Jumper Contacts, please see
🕮 System Manual I/O System 750 XTR.

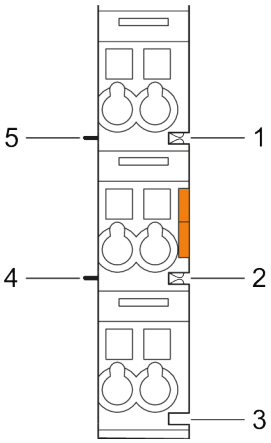

Figure 4: Power Jumper Contacts

No.	Type
1	Groove with spring contact
2	Groove with spring contact
3	Groove without contact
4	Blade contact
5	Blade contact

Arrangement in the Bus Node

For mechanical arrangement of the I/O module, the previous component must have at least 2 open grooves for accommodating the blade contacts.

For electrical compatibility requirements see Section Circuit Diagram [▸ 9].

3.5 Circuit Diagram

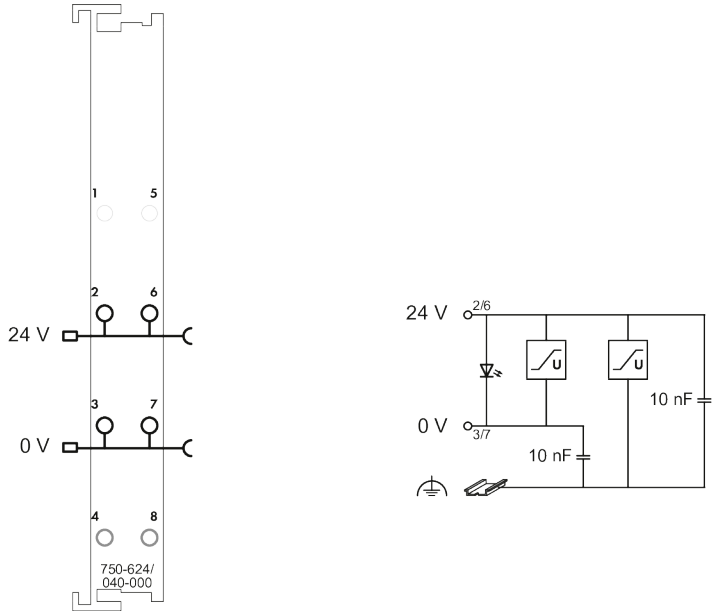

Figure 5: Circuit Diagram

For information on the system power supply, please see 🕮 **System Manual I/O System 750 XTR**.

4 Planning

This section provides helpful information for planing the use of the product in a node.

4.1 Compatibility

The power supply can be operated on all head stations of the WAGO I/O System 750 XTR.

4.2 Requirements for Wiring and Accessories

All field signals and field supplies connected to this 24 V XTR module must be supplied from one or more SELV/PELV power supplies!

The field supply filter is used together with an upstream 24 V supply module (e.g., Item No.: 750-601/040-000, 750-602/040-000 or 750-610/040-000) and offers additional protection against high-energy disturbances on the DC supply lines.

This version of the filter module is NOT intended for use in station control technology, telecontrol technology, railway technology, or in marine-certified operation. For standard-compliant use, the version of the field supply filter without power contacts (Item No.: 750-624/040-001) or the power supply filter (Item No.: 750-626/040-000) must always be used for the I/O module groups.

For power supply concepts and the node structure, e.g., for certified operation of the filter module in shipbuilding or onshore/offshore applications, see the 🕮 System Manual I/O System 750 XTR.

5 Appendix

5.1 Technical Data, Approvals, Guidelines and Standards

Table 1: Test Values: Climatic and Mechanical Environmental Conditions

Standard	Test Value
Transport	
EN 60870-2-2	Ct2(2k4) (except precipitation/water/moisture)
Mechanical Environmental Conditions	
EN 61850-3	Class 2
EN 60870-2-2	Bm
EN 60721-3-1	1M3
EN 60721-3-3	3M5
IEC 60068-2-6	Load at variable frequency: 2g up to 500 Hz, 20 frequency cycles
	Load at fixed frequency: Resonance search: 5g up to 150 Hz Resonance dwell: 5g at resonance frequency, 120 minutes
IEC 60068-2-27 Shock	10g, 16 ms, 1000 shocks per axis and direction, half-sine
	25g, 6 ms, 1000 shocks per axis and direction, half-sine
EN 50155	Vibration and shock: Class 1B (EN 61373)
Climatic Environmental Conditions	
EN 61850-3	Achieved
EN 60721-3-1	1K5 (except precipitation and ice formation)
EN 60721-3-3	3K7 (except wind-driven precipitation, water and ice formation)
EN 60870-2-2	C3 (except wind-driven precipitation and ice formation)
EN 50155	Operating temperature: OT4 Switch-on extended operating temperature: ST1
ISA S71.04 (Conformal Coating) / DIN EN 60068-2-60	Corrosivity level: G3 (aggressive)

Table 2: Test Values: Shipbuilding

Standard	Test Value
Shipbuilding*) using DNV as an example	Temperature: D (cold test at –40 °C/16 h) Relative humidity: B Vibration: B EMC: B Housing: A

*) The list of granted marine certifications is available in the data sheet.

Table 3: Test Values: EMC (Emission of Interference)

Standard	Test Value
Enclosure Emission of Interference	
▪ EN 55016-2-3	30 dB(µV/m), QP, 30 MHz ... 230 MHz 37 dB(µV/m), QP, 230 MHz ... 1 GHz 70 dB(µV/m), Peak, 1 GHz ... 3 GHz 50 dB(µV/m), AV, 1 GHz ... 3 GHz 74 dB(µV/m), Peak, 3 GHz ... 6 GHz 54 dB(µV/m), AV, 3 GHz ... 6 GHz
▪ EN 55011 Class A ▪ EN 55016-2-3	40 dB(µV/m), QP, 30 MHz ... 230 MHz 47 dB(µV/m), QP, 230 MHz ... 1 GHz 76 dB(µV/m), Peak, 1 GHz ... 3 GHz 56 dB(µV/m), AV, 1 GHz ... 3 GHz 80 dB(µV/m), Peak, 3 GHz ... 6 GHz 60 dB(µV/m), AV, 3 GHz ... 6 GHz
▪ Shipbuilding (DNV)**) (Class B)	80 dB(µV/m) ... 52 dB(µV/m), QP, 150 kHz ... 300 kHz 52 dB(µV/m) ... 34 dB(µV/m), QP, 0.3 MHz ... 30 MHz 54 dB(µV/m), QP, 30 MHz ... 2.0 GHz 54 dB(µV/m), AV, 1.0 GHz ... 6.0 GHz 24 dB(µV/m), QP, 156 MHz ... 165 MHz
▪ Shipbuilding (DNV)**) (Class A)	80 dB(µV/m) ... 50 dB(µV/m), QP, 150 kHz ... 30 MHz 60 dB(µV/m) ... 54dB(µV/m), QP, 30 MHz ... 100 MHz 54 dB(µV/m), QP, 100 MHz ... 2.0 GHz 54 dB(µV/m), AV, 1.0 GHz ... 6.0 GHz 24 dB(µV/m), QP, 156 MHz ... 165 MHz
Conducted Emission of Interference – Line Connection (AC)	
▪ EN 55016-2-1	(Standard not applicable)
▪ EN 55011 Class A ▪ EN 55016-2-1	(Standard not applicable)
Conducted Emission of Interference – Line Connection (AC/DC)	
▪ Shipbuilding (DNV)**) (Class B)	96 dB(µV) ... 50 dB(µV), 10 kHz ... 150 kHz 60 dB(µV) ... 50 dB(µV), 150 kHz ... 350 kHz 50 dB(µV), 0.35 MHz ... 30 MHz
▪ Shipbuilding (DNV)**) (Class A)	120 dB(µV) ... 69 dB(µV), 10 kHz ... 150 kHz 79 dB(µV), 150 kHz ... 500 kHz 73 dB(µV), 0.5 MHz ... 30 MHz
Conducted Emission of Interference – Line Connection DC Voltage	
▪ EN 55016-2-1	79 dB(µV) QP, 0.15 MHz ... 0.5 MHz 66 dB(µV) AV, 0.15 MHz ... 0.5 MHz 73 dB(µV) QP, 0.5 MHz ... 30 MHz 60 dB(µV) AV, 0.5 MHz ... 30 MHz
Conducted Emission of Interference – Connection for Wired Networks	
▪ EN 55032 Class A	53 dB(µA) ... 43 dB(µA) QP, 0.15 MHz ... 0,5 MHz 40 dB(µA) ... 30 dB(µA) AV, 0.15 MHz ... 0.5 MHz 43 dB(µA) QP, 0.5 MHz ... 30 MHz 30 dB(µA) AV, 0.5 MHz ... 30 MHz
▪ EN 55032 Class B	40 dB(µA) ... 30 dB(µA)QP, 0.15 MHz ... 0.5 MHz 30 dB(µA) ... 20 dB(µA) AV, 0.15 MHz ... 0.5 MHz 30 dB(µA) QP, 0.5 MHz ... 30 MHz 20 dB(µA) AV, 0.5 MHz ... 30 MHz

*) QP = Quasi Peak Detector; AV = Average Detector
**) If necessary, different data is given in the data sheet (approvals, pertaining to approval for EMC A or EMC B).

Table 4: Test Values: EMC (Immunity to Interference)

Standard	Test Value
Electrostatic Discharge	
▪ EN 61000-4-2 ▪ IEEE C37.90.3	8 kV (contact discharge) 8 kV (air discharge)
High-Frequency Electromagnetic Fields	
▪ EN 61000-4-3 ▪ IEEE C37.90.2	20 V/m (80 MHz ... 1 GHz) 10 V/m (1 GHz ... 6 GHz)
Fast Electrical Transient Disturbances/Burst	
▪ EN 61000-4-4 ▪ IEEE C37.90.1	4 kV
Surge Voltage/Surge	
▪ EN 61000-4-5	1 kV (conductor/conductor); 2 kV (conductor/ground)
Conducted Disturbances, Induced by High-Frequency Fields	
▪ EN 61000-4-6	10 V (150 kHz ... 80 MHz)
Magnetic Felds with Electrical Frequencies	
▪ EN 61000-4-8	300 A/m continuous / 1000 A/m for 1 s
Pulse-Shaped Magnetic Fields	
▪ EN 61000-4-9	1000 A/m
Damped Oscillatory Magnetic Fields	
▪ EN 61000-4-10	100 A/m
Voltage Dips, Short-Term Interruptions and Voltage Fluctuations	
▪ EN 61000-4-11	(Standard not applicable)
Damped Sinusoidal Oscillations	
▪ EN 61000-4-12	1 kV (conductor/conductor); 2 kV (conductor/ground)
Harmonic and Interharmonics	
▪ EN 61000-4-13	(Standard not applicable)
Conducted Asymmetric Disturbances	
▪ EN 61000-4-16	30 V continuous; 300 V for 1 s
Operating Frequency	
▪ EN 60255-26	Class A (150 V conductor/conductor/300 V conductor/ground) A cable length of 10 m or more requires use of shielded cables.
Alternating Components of the Voltage to DC Line Connections	
▪ EN 61000-4-17	15 %
Damped Oscillatory Waves	
▪ EN IEC 61000-4-18 ▪ IEEE C37.90.1	1.25 kV conductor/conductor 2.5 kV conductor/ground
Voltage Dips, Short-Term Interruptions and Voltage Fluctuations to DC Supply Inputs	
▪ EN 61000-4-29	see System Manual 750 XTR, section "Buffering"
Harmonics	
▪ Shipbuilding (DNV)*)	Max. 2 W; DC: 3 V eff.; AC: 10 % to 15th harmonic; 10 % ... 1 % for 15th to 100th harmonic; 1 % for 100th to 200th harmonic

*) The marine certifications that have been issued can be found in the data sheet.

Table 5: Standards and Rated Conditions for Railway Applications (EN 50155:2017)

Requirement	Class/Standard Compliance
4.3 Environmental Service Conditions	
4.3.1 Altitude	AX (EN 50125-1)
4.3.2 Operating temperature	OT4
4.3.3 Switch-on extended operating temperature	ST1
4.3.4 Rapid temperature variations	H1
4.3.5 Shock and vibration	1B (EN 61373)
4.3.7 Relative humidity	95 % (EN 50125-1)
5.1 Power Supply	
5.1.1.2 DC supply range	
Minimum continuous voltage	0.7 × U_n
Maximum continuous voltage	1.25 × U_n
5.1.1.3 Temporary DC power supply fluctuation	
Minimum voltage	0.6 × U_n
Maximum voltage	1.4 × U_n
5.1.1.4 Interruptions of voltage supply	S1
5.1.3 Switching classes (power supply)	Must be ensured with a suitable external power supply
5.2.3 Electromagnetic Compatibility	EN 50121-3-2
5.2.6 Insulation	EN 50124-1; overvoltage category OV2
6.2 Useful Life	LX
10.7 Protective Coatings for Printed Board Assemblies	PC2
11.3 Fire Behavior Requirements	EN 45545-2 hazard level HL3
1**2 Documentation**	Per appendix G
MTBF values (per MIL-HDBK-217-F2)	Are available and are provided upon request on a project-specific basis

WAGO is certified in accordance with the IRIS quality standard.

Table 6: Additional EMC Requirements for Railway Applications

Requirements	Class Compliance
EBA (German Federal Railway Authority) Regulation No. EMC 06 Technical rules on electromagnetic compatibility: Certification of the radio compatibility of rail vehicles with railway radio services	S0
Electromagnetic compatibility	EN 50121-4 and EN 50121-5

Note

Subject to changes!

Please also observe the further product documentation! You can generate the current datasheet at any time at: **www.wago.com** /<item number>.

See also

- Data sheet 750-624/040-000 [▸ 15]

Data Sheet | Item Number: 750-624/040-000

Filter module for field-side power supply (surge); 24 VDC; Higher isolation; Extreme

https://www.wago.com/750-624/040-000

Technical data

Signal type	Voltage
Signal type (voltage)	24 VDC
Supply voltage (system)	5 VDC; via data contacts
Supply voltage (field)	24 VDC (-25 … +30 %); via power jumper contacts (power supply via blade contact; transmission via spring contact); Derating must be observed!
Derating	Derating (supply voltage): Ambient temperatures under laboratory conditions: (-25 … +30 %); for -40 … +55 °C: 24 V (-25 … +20 %); for +55 … +70 °C: 24 V (-25 … +10 %); Lower limit in all temperature ranges: -27.5 % (including 15 % residual ripple)
Current carrying capacity (power jumper contacts)	10 A
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Rated impulse withstand voltage	1 kV
Use	in marine and onshore/offshore applications, as well as in telecontrol and rail technology
Indicators	LED (C) green: operating voltage status: power jumper contacts

Connection data

Connectable conductor materials	Copper
Connection type	Field supply
Solid conductor	0.25 … 2.5 mm² / 24 … 14 AWG
Fine-stranded conductor	0.25 … 2.5 mm² / 24 … 14 AWG
Strip length	8 … 9 mm / 0.31 … 0.35 inches
Connection technology: field supply	4 x CAGE CLAMP®

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	dark gray
Housing material	Polycarbonate; polyamide 6.6
Fire load	0.951 MJ
Weight	46.6 g
Conformity marking	CE

Continued on next page

Environmental requirements

Ambient temperature (operation)	-40 … +70 °C
Ambient temperature (storage)	-40 … +85 °C
Ambient temperature (installation)	-20 … +70 °C
Protection type	IP20
Pollution degree	2 per IEC 61131-2
Operating altitude	without temperature derating: 0 … 2000 m; with temperature derating: 2000 … 5000 m (0.5 K/100 m); 5000 m (max.)
Mounting position	Horizontal left, horizontal up, vertical top and vertical bottom
Relative humidity (without condensation)	95 %
Relative humidity (with condensation)	Short-term condensation per Class 3K7/IEC EN 60721-3-3 and E-DIN 40046-721-3 (except for wind-driven precipitation, water and ice formation)
Vibration resistance	According to type test for marine classification (ABS, BV, DNV, IACS, LR): acceleration: 5g, IEC 60068-2-6, EN 60870-2-2, IEC 60721-3-1, -3, EN 50155, EN 61373
Shock resistance	per IEC 60068-2-27 (10g/16 ms/half-sine/1,000 shocks; 25g/6 ms/half-sine/1,000 shocks), EN 50155, EN 61373
EMC immunity to interference	per EN 61000-6-1, -2; EN 61131-2; marine applications; EN 50121-3-2; EN 50121-4, -5; EN 60255-26; EN 60870-2-1; EN 61850-3; IEC 61000-6-5; IEEE 1613; VDEW: 1994
EMC emission of interference	per EN 61000-6-3, -4, EN 61131-2, EN 60255-26, marine applications, EN 60870-2-1, EN 61850-3, EN 50121-3-2, EN 50121-4, -5
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

Product Classification

UNSPSC	39121610
eCl@ss 10.0	27-24-26-10
eCl@ss 9.0	27-24-26-10
ETIM 9.0	EC001600
ETIM 8.0	EC001600
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 Perfluorobutane sulfonic acid (PFBS) and its salts
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Austria)	62e47fb4-9223-4b2c-8bab-e3744eeee737
SCIP notification number (Belgium)	97327366-1cf5-4c4e-8302-945ff8eef5fa
SCIP notification number (Bulgaria)	d63458f8-ce81-42ec-a3bd-e26eb2828d33
SCIP notification number (Czech Republic)	1de2db22-f463-4930-9329-d88533ea3f9b
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SCIP notification number (Finland)	8430f996-6f12-45db-999b-1d22eace0999
SCIP notification number (France)	7b1e8d1f-1058-4e80-9f13-58c7f8b7a80e
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SCIP notification number (Hungary)	67be5329-b92f-4951-9eb5-abf4dfdec9dd
SCIP notification number (Italy)	a3c55f80-4ce5-49a0-91f4-d8ebe060bf4f
SCIP notification number (Netherlands)	5c315479-5a1b-47eb-9ac8-7f37c79f1c4f
SCIP notification number (Poland)	04497b2e-c4bc-4842-8296-2edd39e0c58f
SCIP notification number (Romania)	7ba00f46-776a-439f-b3f8-1e848a2494f5
SCIP notification number (Sweden)	16889b1f-20c8-4e4e-a80c-2a2084607b52

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Approvals / Certificates

General approvals

Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03083
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	-	E175199

Declarations of conformity and manufacturer's declarations

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

Approvals for marine applications

Approval	Standard	Certificate Name
ABS American Bureau of Shipping	-	22-2208829-PDA
DNV DNV GL SE	-	TAA00000Y7
LR Lloyds Register	-	LR22276776TA
PRS Polski Rejestr Statków	-	TE/1099/880590/23

Approvals for hazardous areas

Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV 17 ATEX 193969X (II 3 G Ex ec IIC T4 Gc)
CCC CNEX	CNCA-C23-01	2020312310000214 (Ex ec IIC T4 Gc)
IECEx TUEV Nord Cert GmbH	IEC 60079-0	IECEx TUN 16.0046X (Ex ec IIC T4 Gc)
UKEx WAGO GmbH & Co. KG	EN 60079-0	UKCA_WA GO22UKEX005X_ec
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726

List of Tables

List of Figures

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