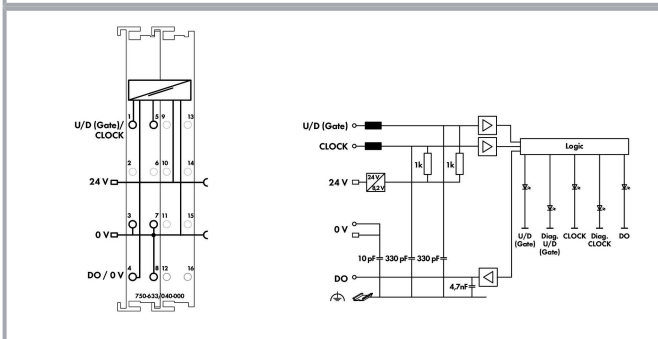
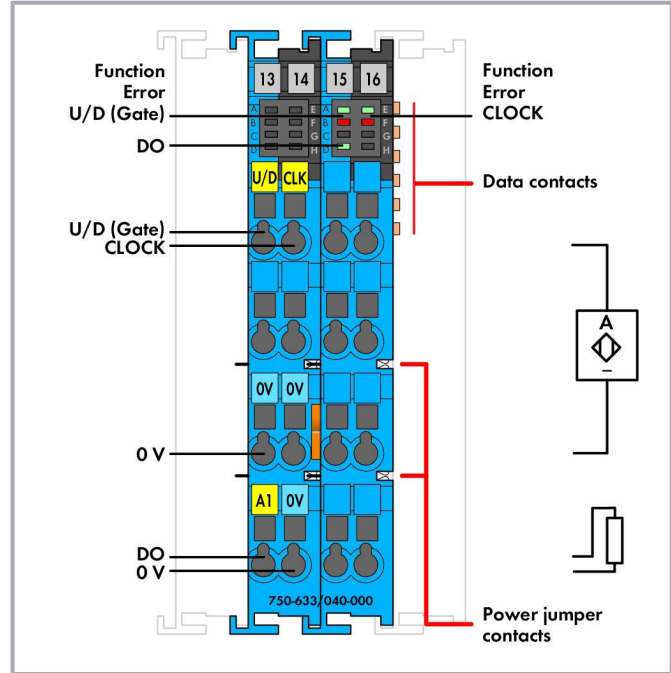
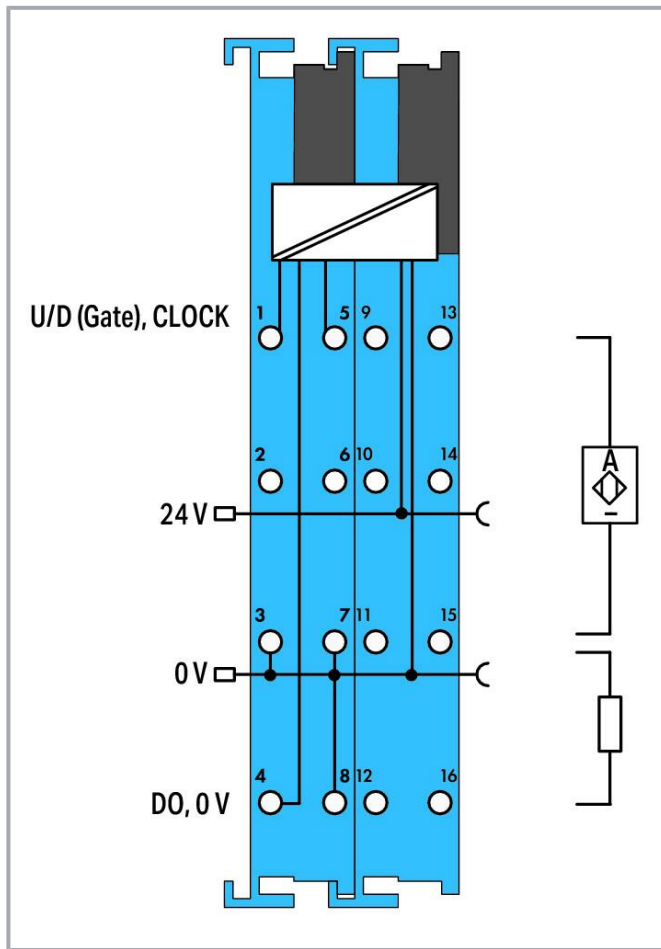




Color: ■



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



Item description

This counter records binary pulse signals with NAMUR-compliant levels and transmits the counter state to the fieldbus system. The counting direction in "up/down counter" mode can be set using the U/D input. A control byte sets or resets the counter and digital output (DO). Additionally, a limit value can be set at which the DO output is activated when this value is exceeded. The output is short-circuit-proof.

Operating modes:

- Up counter with enable input
- Up/Down Counter
- Frequency counter
- Peak-time counter

Indicators:

- Green LED (Up/Down + CLK + DO status)

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



- Red LED (Up/Down + CLK error status)

Field and system levels are electrically isolated.

The device is ideal for operation in extreme environments thanks to:

- An extended temperature range
- Greater immunity to impulse voltages and electromagnetic interference
- Higher vibration and shock resistance

Data

Notes

Note	The up/down counter must only be operated via 24 VDC Ex i XTR power supply (750-606/040-000)!
	General information (e.g., installation regulations) on explosion protection is available in the WAGO I/O System 750 XTR manuals!

Technical data

Number of digital outputs	1
Number of counters	1
Counter depth	32 bits
Sensor supply U_V	8.2 V
Input filter	10 μ s
Open-circuit voltage	8.2 V
Output voltage	24 VDC
Short-circuit current	8.2 mA (+/- 5 %)
Signal current (0)	1.2 mA
Signal current (1)	2.1 mA
Switching hysteresis	0.2 mA
Switching frequency	20 Hz ... 50 kHz
Input resistance (max.)	1000 Ω
Internal resistance R_i	285 Ω
Power consumption P_{max}	2.2 W (sensor load: 8.2 mA + actuator load: 45 mA)
Data width	1 x 32-bit data, 1 x 8-bit status/diagnostics
Intrinsic safety Ex i	yes

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



Supply voltage (system)	5 VDC; via data contacts
Current consumption (5 V system supply)	25 mA
Supply voltage (field)	24 VDC; (Ex i XTR power supply: $U_o = \text{max. } 26.8 \text{ V}$); via power jumper contacts (power supply via blade contact; transmission via spring contact)
Current consumption, field supply (module with no external load)	31 mA
Power loss P_i	1.7 W (sensor load: 8.2 mA + actuator load: 45 mA)
Isolation	300 VAC system/field
Rated surge voltage	1 kV; Rated surge voltage between intrinsically safe and non-intrinsically safe circuits: 1.5 kV (EN 60079-11)
Indicators	LED (A, D, E) green: U/D (Gate), DO, CLOCK; LED (B, F) red: Error U/D (Gate), Error CLOCK
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Current carrying capacity (power jumper contacts)	1 A
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ia Ga] IIC T4 Gc; II (1) D [Ex ia Da] IIIC; I (M1) [Ex ia Ma] I

Explosion protection

Ex standard	EN/IEC 60079-0, -7, -11
Safety data (input)	$U_o = 12 \text{ V}$; $I_o = 13.3 \text{ mA}$; $P_o = 40.4 \text{ mW}$; Linear characteristic curve
Reactances of Ex ia IIC inputs	$L_o = 100 \text{ mH}$; $C_o = 1.41 \mu\text{F}$
Reactances of Ex ia IIB inputs	$L_o = 100 \text{ mH}$; $C_o = 9 \mu\text{F}$
Reactances of Ex ia IIA inputs	$L_o = 100 \text{ mH}$; $C_o = 36 \mu\text{F}$
Reactances of Ex ia I inputs	$L_o = 100 \text{ mH}$; $C_o = 35 \mu\text{F}$
Safety data (output)	$U_o = 26.8 \text{ V}$; $I_o = 96.69 \text{ mA}$; $P_o = 674.83 \text{ mW}$; Linear characteristic curve
Reactances of Ex ia IIC output	$L_o = 1.3 \text{ mH}$; $C_o = 0.091 \mu\text{F}$
Reactances of Ex ia IIB output	$L_o = 13 \text{ mH}$; $C_o = 0.719 \mu\text{F}$
Reactances of Ex ia IIA output	$L_o = 23 \text{ mH}$; $C_o = 2.369 \mu\text{F}$
Reactances of Ex ia I output	$L_o = 33 \text{ mH}$; $C_o = 3.849 \mu\text{F}$
Reactances (note)	Reactances without accounting for the concurrence of capacitance (C_o) and inductance (L_o)

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



Connection data

Connection technology: inputs/outputs	16 x CAGE CLAMP®
Connection type 1	Inputs/Outputs
Solid conductor	0.25 ... 2.5 mm ² / 24 ... 14 AWG
Fine-stranded conductor	0.25 ... 2.5 mm ² / 24 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches

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
---------------	-------------

Material Data

Color	blue
Housing material	Polycarbonate; polyamide 6.6
Fire load	2.031 MJ
Weight	88.1 g
Conformity marking	CE

Environmental requirements

Ambient temperature (operation)	-40 ... +70 °C
Ambient temperature (storage)	-40 ... +85 °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 (standing/lying); vertical
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	per IEC 60068-2-6 (acceleration: 5g), EN 60870-2-2, IEC 60721-3-1, -3

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Shock resistance	per IEC 60068-2-27 (15g/11 ms/half-sine/1,000 shocks; 25g/6 ms/1,000 shocks), EN 61373
EMC immunity to interference	per EN 61000-6-1, -2, EN 61131-2, marine applications, 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
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible H ₂ S 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
ETIM 8.0	EC001601
ETIM 7.0	EC001601
PU (SPU)	1 pcs
Packaging type	box
Country of origin	DE
GTIN	4055143649599
Customs tariff number	85389099990

Environmental Product Compliance

RoHS Compliance Status	Compliant, No Exemption
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Approvals / Certificates

General approvals

Logo	Approval	Additional Approval Text	Certificate name
	CCC CNEX	CNCA-C23-01	2020312310000212 (Ex ec[iaGa]IIC T4 Gc, [Ex ia Da]IIC, [Ex ia Ma]I)
	CCC CNEX	CNCA-C23-01	2020312310000212 (Ex ec[iaGa]IIC T4 Gc, [Ex ia Da]IIC, [Ex ia Ma]I)
	EAC	TP TC 020/2011	EAC RU C-DE.AM02.

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Brjansker Zertifizierungsstelle

B.00087/19



UL
Underwriters Laboratories Inc. (ORDINARY
LOCATIONS)

UL 61010-2-201

E175199




UL
Underwriters Laboratories Inc. (ORDINARY
LOCATIONS)





-

E175199

Declarations of conformity and manufacturer's declarations

Logo	Approval	Additional Approval Text	Certificate name
	EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Approvals for marine applications

Logo	Approval	Additional Approval Text	Certificate name
	ABS American Bureau of Shipping	-	22-2208829- PDA
	DNV DNV Germany GmbH	DNV-CG-0339, Aug. 2021	TAA00000Y7
	LR Lloyds Register	-	LR22276776TA
	PRS Polski Rejestr Statków	-	TE/2215 /880590/18

Approvals for hazardous areas

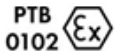
Logo	Approval	Additional Approval Text	Certificate name
	ATEX	EN 60079-0	TUEV_17_ATEX_196484X

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TUEV Nord Cert GmbH









(Ex ec[iaGa] IIC T4 Gc, [Ex iaDa] IIIC, [Ex iaMa] I)

	CCC CNEX	CNCA-C23-01	2020312310000212 (Ex ec[iaGa]IIC T4 Gc, [Ex iaDa]IIIC, [Ex ia Ma]I)
	EAC Brjansker Zertifizierungsstelle	TP TC 012/2011	EAC RU C-DE.AM02.B.00163/19 ([ExiaMa]I X,2Ex e[iaGa]IIC T4Gc X,[ExiaDa] IIIC X)
	IECEX TUEV Nord Cert GmbH	IEC 60079-0	IECEX TUN 17.0005X (Ex ec[iaGa] IIC T4 Gc, [Ex iaDa] IIIC, [Ex iaMa] I)
	UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726 Sec.1

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; silver-colored	www.wago.com/210-505
	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

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



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

Power supplies

Supply module



Item no.: 750-606/040-000

Power Supply; 24 VDC; Diagnostics; Intrinsically safe; Extreme

www.wago.com/750-606/040-000

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

Marking accessories

Marker carrier

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Item no.: 750-103
Group marker carrier

www.wago.com/750-103

Marker

	<p>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</p>	<p>www.wago.com/2009-145/000-006</p>
	<p>Item no.: 2009-145 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white</p>	<p>www.wago.com/2009-145</p>
	<p>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</p>	<p>www.wago.com/2009-145/000-002</p>
	<p>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</p>	<p>www.wago.com/2009-145/000-007</p>
	<p>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</p>	<p>www.wago.com/2009-145/000-005</p>
	<p>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</p>	<p>www.wago.com/2009-145/000-012</p>
	<p>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</p>	<p>www.wago.com/2009-145/000-023</p>
	<p>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</p>	<p>www.wago.com/2009-145/000-024</p>
	<p>Item no.: 248-501/000-006 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue</p>	<p>www.wago.com/248-501/000-006</p>
	<p>Item no.: 248-501/000-007 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray</p>	<p>www.wago.com/248-501/000-007</p>
	<p>Item no.: 248-501/000-002 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow</p>	<p>www.wago.com/248-501/000-002</p>

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



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



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

Downloads

Documentation

Data sheet

750-633/040-000, Up/Down Counter Ex i XTR	pdf 224.8 kB	Download
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Manual

Product Manual Up/Down Counter Ex i /XTR	V 1.1.0 2020 Jun 8	pdf 3.6 MB	Download
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Bid Text

750-633/040-000

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X81 - Datei	2019 Feb 19	xml 9.9 kB	Download
750-633/040-000 doc - Datei	2018 Feb 8	doc 37.9 kB	Download
Instruction Leaflet			
CCC Ex (Additional information) WAGO-I/O-SYSTEM*750-****/*040-****Ex i XTR	2023 Apr 26	pdf 146.9 kB	Download
System Description			
System Manual XTR Basic conditions and recommendations for higher operational safety	V 2.0.0 2022 Sep 14	pdf 8.0 MB	Download
Overview on WAGO-I/O-SYSTEM 750 approvals		pdf 789.0 kB	Download
Intrinsically Safe XTR Modules – General Product Information		pdf 221.9 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
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CAD data			
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CAE data			
EPLAN Data Portal 750-633/040-000		URL	Download
EPLAN Data Portal 750-633/040-000		URL	Download
ZUKEN Portal 750-633/040-000		URL	Download

Installation Notes

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Product family

WAGO I/O System 750 XTR

I/O-System 750 XTR: Dort automatisieren, wo jedes andere System an seine Grenzen stößt – und das zuverlässig und wirtschaftlich! XTR – dieses Kürzel im Systemnamen steht für extremen Schutz vor klimatischen Einflüssen, Schwingungen, Erschütterungen und Überspannungen.

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