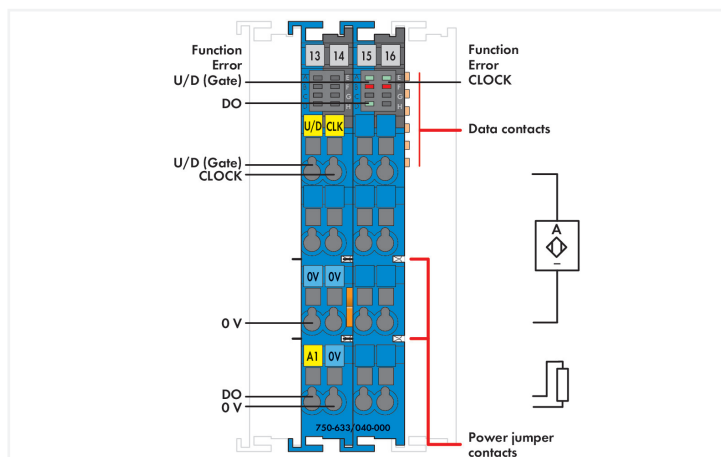
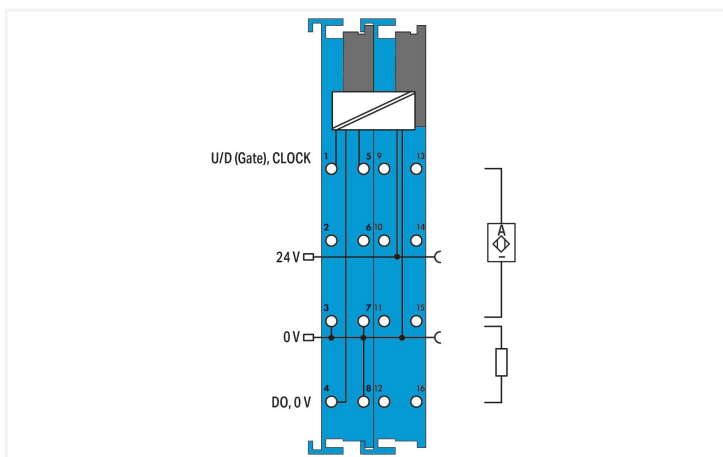
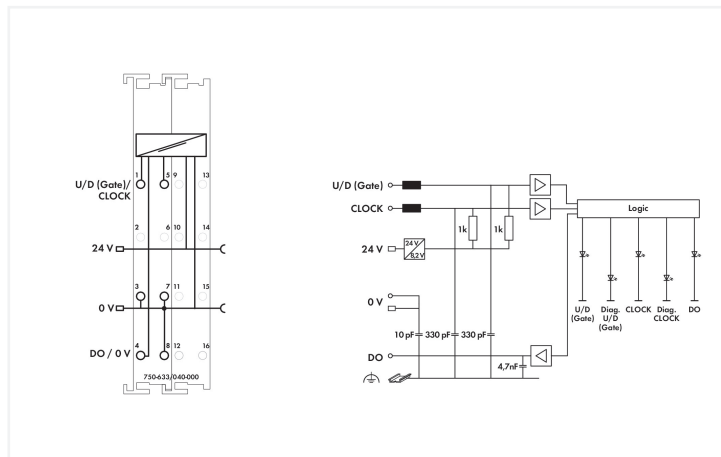




Color: ■ blue



This counter records binary pulse signals with NAMUR-compliant levels at the CLK (CLOCK) input and transmits the counter status to the installed field-bus 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)
- 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

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!
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Technical data

Number of digital outputs	1
Number of counters	1
Signal current (0)	1.2 mA
Signal current (1)	2.1 mA
Input filter	10 μ s
Sensor supply U_v	8.2 V
Output voltage	24 VDC
Counter depth	32 bits
Open-circuit voltage	8.2 V
Short-circuit current	8.2 mA (+/- 5 %)
Switching hysteresis	0.2 mA
Switching frequency	20 Hz ... 50 kHz
Input resistance (max.)	1000 Ω
Internal resistance R_i	285 Ω
Intrinsic safety Ex i	Yes
Data width	1 x 32-bit data, 1 x 8-bit status/diagnostics
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: $U_o = \max. 26.8$ 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 consumption P_{max}	2.2 W (sensor load: 8.2 mA + actuator load: 45 mA)
Power loss P_i	1.7 W (sensor load: 8.2 mA + actuator load: 45 mA)
Isolation	300 VAC system/supply
Rated surge voltage	1 kV; Rated surge voltage between intrinsically safe and non-intrinsically safe circuits: 1.5 kV (EN 60079-11)
Number of incoming power jumper contacts	2
Number of outgoing power jumper contacts	2
Current carrying capacity (power jumper contacts)	1 A
Indicators	LED (A, D, E) green: U/D (Gate), DO, CLOCK; LED (B, F) red: Error U/D (Gate), Error CLOCK
Marking	ATEX/IECEx: II 3 (1) G Ex ec [ja Ga] IIC T4 Gc; II (1) D [Ex ia Da] IIC; I (M1) [Ex ia Ma] I

Explosion protection

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

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
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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
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
Customs tariff number	85389099990

Environmental Product Compliance

RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II

Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
EAC Brjansker Zertifizierungs- stelle	TP TC 020/2011	EAC RU C-DE.AM02. B.00087/19
UL Underwriters Laboratories Inc. (ORDINARY LOCATI- ONS)	-	E175199

Declarations of conformity and manufacturer's declarations

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

Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	-	22-2208829-PDA
DNV DNV GL SE	-	TAA00000Y7
LR Lloyds Register	-	LR22276776TA
PRS Polski Rejestr Statków	-	TE/2215/880590/18

Approvals for hazardous areas



Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV_17_ATEX_196484X (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 ia Da] IIIC, [Ex ia Ma] I)
EAC Brjansker Zertifizierungs- stelle	TP TC 012/2011	EAC RU C-DE.AM02. B.00163/19 ([ExiaMa] 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 ia- Da] IIIC, [Ex iaMa] I)
UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS)	UL 121201	E198726 Sec.1

Downloads

Environmental Product Compliance

Compliance Search	
Environmental Product Compliance 750-633/040-000	↓

Documentation

Manual			
Product Manual Up/Down Counter Ex i /XTR	V 1.1.0 08.06.2020	pdf 3495.63 KB	↓
System Manual Series 750/753			↓

System Description			
Intrinsically Safe XTR Modules – General Product Information		pdf 214.93 KB	↓
Overview on WAGO-I/O-SYSTEM 750 approvals		pdf 770.48 KB	↓

Bid Text			
750-633/040-000	19.02.2019	xml 9.68 KB	↓
750-633/040-000	08.02.2018	doc 37.00 KB	↓

Instruction Leaflet			
CCC Ex (Additional information)	26.04.2023	pdf 143.50 KB	↓

CAD/CAE-Data

CAD data	
2D/3D Models 750-633/040-000	↓

CAE data	
EPLAN Data Portal 750-633/040-000	↓
ZUKEN Portal 750-633/040-000	↓

1 Compatible Products

1.1 Optional Accessories

1.1.1 DIN-rail

1.1.1.1 Mounting accessories

<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>
<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>

1.1.2 Marking

1.1.2.1 Group marker carrier



Item No.: 750-107
Group marker carrier

1.1.2.2 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



1.1.2.3 Marker carrier



Item No.: 750-103
Group marker carrier

1.1.3 Power supply

1.1.3.1 Supply module



Item No.: 750-606/040-000
Power Supply; 24 VDC; Diagnostics; Intrinsically safe; Extreme

1.1.4 Shield termination

1.1.4.1 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