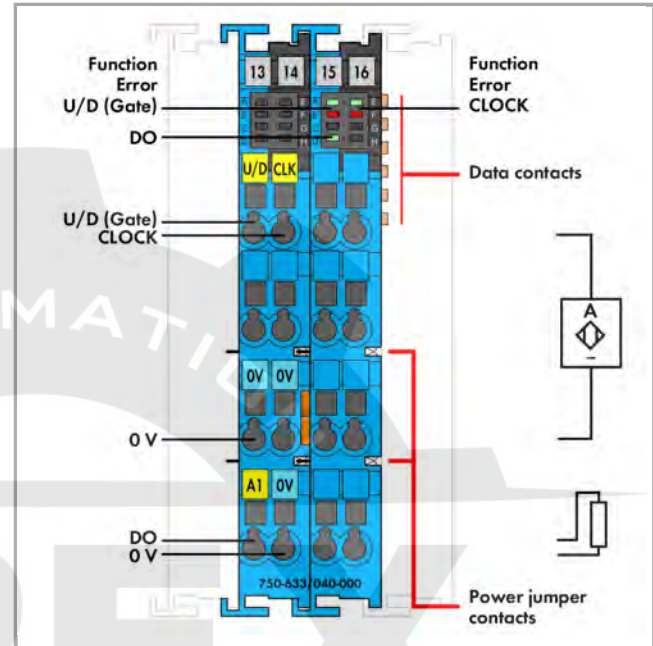
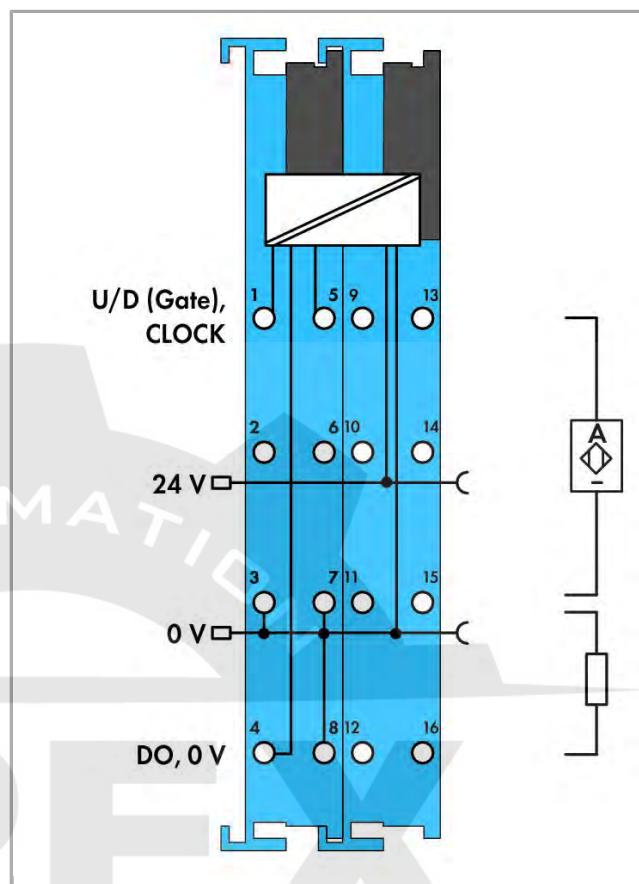
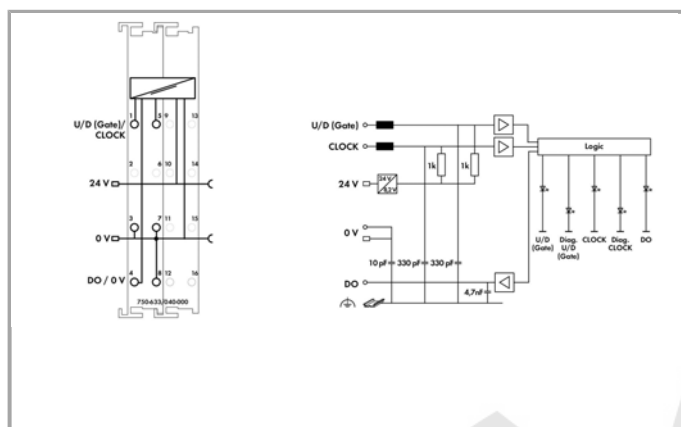




RoHS  Compliant

[BOMcheck.net](https://www.bomcheck.net)



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 measurement
- 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 harsh environments thanks to:

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

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!

Data

Technical Data

Number of digital outputs	1
No. of counters	1
Counter depth	32 Bit
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)
Bit width	1 x 32-bit data; 1 x 8-bit status/diagnostics
Intrinsic safety Ex i	yes
System supply voltage	DC 5 V; via data contacts
Current consumption, system supply (5 V)	25 mA
System and sensor supply voltage	)
Field supply voltage	DC 24 V; via power jumper contacts (Ex i XTR power supply: U_O = max. 27.3 V)
Current consumption, field supply (module with no external load)	31 mA
Power loss P_V	1.7 W (sensor load: 8.2 mA + actuator load: 45 mA)
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 of the power jumper contacts	1 A
Ex guideline	EN/IEC 60079-0, -7, -11
Safety Data – Input	U_O = 12 V; I_O = 13,3 mA; P_O = 40,4 mW; Kennlinie: Linear

Reactances, inputs, Ex ia IIC	$L_o = 100 \text{ mH}; C_o = 1.41 \mu\text{F}$
Reactances, inputs, Ex ia IIB	$L_o = 100 \text{ mH}; C_o = 9 \mu\text{F}$
Reactances, inputs, Ex ia IIA	$L_o = 100 \text{ mH}; C_o = 36 \mu\text{F}$
Reactances, inputs, Ex ia I	$L_o = 100 \text{ mH}; C_o = 35 \mu\text{F}$
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, output, Ex ia IIC	$L_o = 1.3 \text{ mH}; C_o = 0.091 \mu\text{F}$
Reactances, output, Ex ia IIB	$L_o = 13 \text{ mH}; C_o = 0.719 \mu\text{F}$
Reactances, output, Ex ia IIA	$L_o = 23 \text{ mH}; C_o = 2.369 \mu\text{F}$
Reactances, output, Ex ia I	$L_o = 33 \text{ mH}; C_o = 3.849 \mu\text{F}$
Reactances	(The above-listed ratings do not account for the coincidental occurrence of capacitances and inductances. For ratings taking the coincidental occurrence of capacitances and inductances into account, see manual)

Connection data

Connection technology: In-/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 inch

Geometrical Data

Width	24 mm / 0.945 inch
Height	67.8 mm / 2.669 inch
Height from upper-edge of DIN-35 rail	60.6 mm / 2.386 inch
Depth	100 mm / 3.937 inch

Mechanical data

Type of mounting	DIN-35 rail
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Material Data

Housing material	Polycarbonate, polyamide 6.6
Fire load	0 MJ
Weight	88.1 g
Conformity marking	1



Environmental Requirements

Surrounding air (operating) temperature	-40 ... 70 °C
Surrounding air (storage) temperature	-40 ... 85 °C
Protection class	IP20
Degree of pollution (5)	2 per IEC 61131-2
Operating altitude	without temperature derating: 0 ... 2000 m; with temperature derating: 2000 ... 5000 m (0.5 K/100 m); max.: 5000 m
Mounting position	horizontal (standing/lying) or vertical
Relative air humidity (no condensation)	95 %
Relative humidity	Short-term condensation per Class 3K7/IEC EN 60721-3-3 and E DIN 40046-721-3 (except wind-driven precipitation, water and ice formation)
Vibration resistance	acc. to 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	acc. to 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	acc. to 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

Country of origin	DE
GTIN	4055143649599
Customs Tariff No.	85389099990

Approvals / Certificates

Ex-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV_17_ATEX_196484X
	IECEx TUEV Nord Cert GmbH	IEC 60079-0	IECEx TUN 17.0005X



UL
Underwriters Laboratories Inc. (HAZARDOUS
LOCATIONS)

ANSI/ISA 12.12.01

E198726 Sec.1

Ship Approvals

Logo	Approval	Additional Approval Text	Certificate name
	LR Lloyds Register	-	17/20073 LR
	PRS Polski Rejestr Statków	-	TE/2215 /880590 /18

UL-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 508	E175199 Sec10

Compatible products

shield connection

	Item no.: 790-108 Shield clamping saddle; 11 mm wide; diameter of compatible conductor	790-108
	Item no.: 790-116 Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm	790-116
	Item no.: 790-124 Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm	790-124
	Item no.: 790-140 Shield clamping saddle; diameter of compatible conductor	790-140
	Item no.: 790-208 Shield clamping saddle; 12.4 mm wide; 3 ... 8 mm	790-208
	Item no.: 790-216 Shield clamping saddle; 21.8 mm wide; 6 ... 16 mm	790-216
	Item no.: 790-220 Shield clamping saddle; 30 mm wide; 6 ... 20 mm	790-220

power supply



Item no.: 750-606/040-000

Power Supply; 24 VDC; Intrinsically safe; Extreme

750-606

/040-000

Marking accessories



Item no.: 2009-145

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145



Item no.: 2009-145/000-002

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-002



Item no.: 2009-145/000-005

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-005



Item no.: 2009-145/000-006

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-006



Item no.: 2009-145/000-007

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-007



Item no.: 2009-145/000-012

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-012



Item no.: 2009-145/000-023

Mini-WSB Inline; for smartPRINTER; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-023



Item no.: 2009-145/000-024

Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type

2009-145

/000-024



Item no.: 248-501

Miniature WSB Quick marking system; plain; Marker width 5 mm; 10 strips with 10 markers per card

248-501



Item no.: 248-501/000-002

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501

/000-002



Item no.: 248-501/000-005

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501

/000-005



Item no.: 248-501/000-006

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501

/000-006



Item no.: 248-501/000-007

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

248-501

/000-007

**Item no.: 248-501/000-012**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-012

248-501

**Item no.: 248-501/000-017**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-017

248-501

**Item no.: 248-501/000-023**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-023

248-501

**Item no.: 248-501/000-024**

Mini-WSB marking card; as card; not stretchable; plain; snap-on type

/000-024

248-501

**Item no.: 750-103**

Group marker carrier

750-103

**Item no.: 750-107**

Group marker carrier

750-107

Carrier rail**Item no.: 210-112**

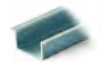
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm

210-112

**Item no.: 210-113**

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715

210-113

**Item no.: 210-114**

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715

210-114

**Item no.: 210-115**

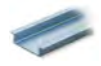
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm

210-115

**Item no.: 210-118**

Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715

210-118

**Item no.: 210-196**

Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715

210-196

**Item no.: 210-197**

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715

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

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

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

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

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

210-508

Downloads

Documentation

Data sheet

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

Up/Down Counter Ex i /XTR	V 1.0.0	pdf 1.8 MB	Download
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Bid Text

750-633/040-000	doc 37.9 kB	Download
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Additional Information

Disposal; Electrical and electronic equipment, Packaging	V 1.0.0	pdf 265.8 kB	Download
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System Description

Overview on WAGO-I/O-SYSTEM 750 approvals	pdf 780.2 kB	Download
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Intrinsically Safe XTR Modules – General Product Information	pdf 401.8 kB	Download
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System Manual /XTR	V 1.2.0	pdf 2.9 MB	Download
Basic conditions and recommendations for higher operational safety			

CAD/CAE - Smart Data

CAD data

3D Download 750-633/040-000	URL	Download
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Product family

750 XTR Series – I/O System

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.

[Learn more about the product family.](#)

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Subject to changes.
