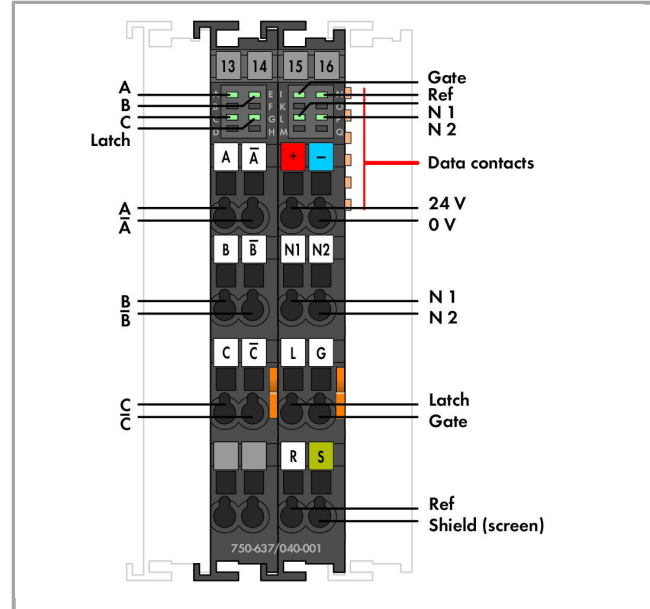


Data sheet | Item number: 750-637/040-001

Incremental encoder interface; 24 VDC; Differential input; 32 bits; Extreme

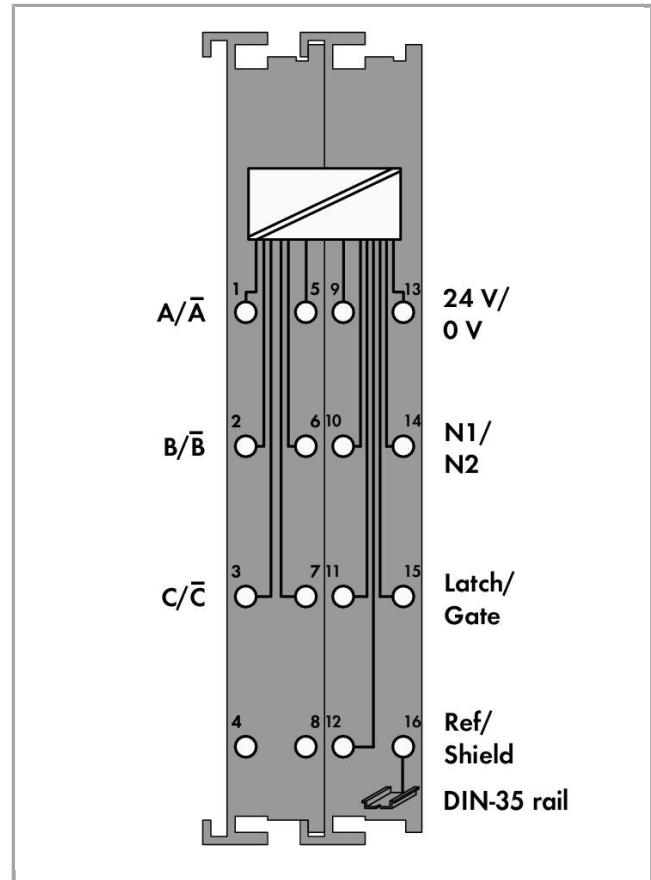
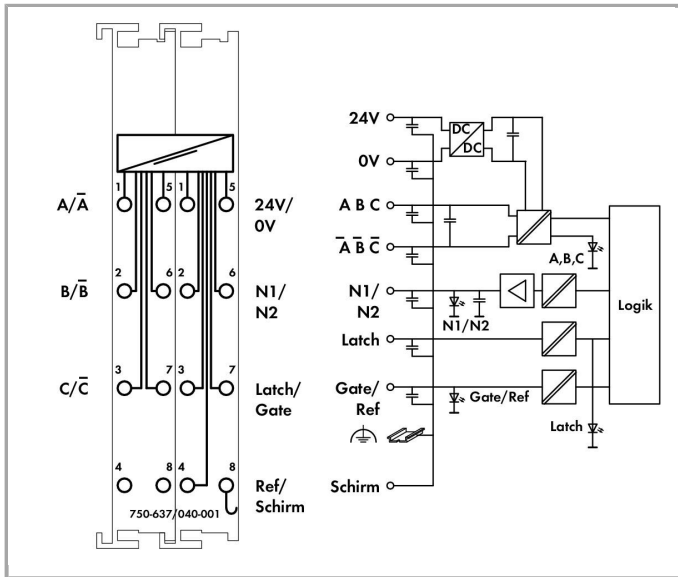


750-637/040-001



RoHS  Compliant

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



## Item description

This module is an interface for incremental encoders with standard connections (e.g., RS-422, differential, single-ended).

A counter with quadrature decoder as well as a latch for the zero impulse can be read or enabled by the control. The control can set the counter or transmit the counter value to the Latch. As an alternative this can also be done using input "C" or "Latch."

The rate (increments/ms) is automatically acquired and can also be transmitted to the control as an alternative to the latch value.

A counter lock-out is possible using the "Gate" input. Input "Ref" can be used to activate the initial point "C" function.

The cam outputs N1 and N2 indicate whether the counter value is within a defined range of values. The range can be adjusted.

Both the module and the 24 V encoder require a 24 VDC power supply.

The shield is directly connected to the DIN-rail.

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



## Data

### Technical Data

Counter depth	32 Bit
Sensor connection	A, A/, B, B/, C, C/
Transmitter supply voltage	DC 24 V
Zero impulse latch	32 Bit
Quadrature decoder	4-fold report
Input current typ.	Latch 7 mA, Gate 7 mA, Ref. 7 mA
Output current per channel	0.5 A
Output current	short-circuit-protected
Output voltage	DC 24 V
Voltage range for signal (0)	-3 ... +5 VDC
Voltage range for signal (1)	15 ... 30 VDC
Bit width	1 x 32 bits data 1 x 8 bits control/status
Operating frequency	250 kHz
Commands	read, set, enable
System supply voltage	DC 5 V; via data contacts
Current consumption, system supply (5 V)	110 mA
System and sensor supply voltage	)
Current consumption, field supply (module with no external load)	35 mA
Rated surge voltage	1 kV

### Connection data

Connection technology: In-/Outputs	16 x CAGE CLAMP®
Connection type (1)	Inputs/Outputs
Solid conductor	0.25 ... 2.5 mm <sup>2</sup> / 24 ... 14 AWG
Fine-stranded conductor	0.25 ... 2.5 mm <sup>2</sup> / 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
Weight	116.8 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, EN 50155, EN 61373
Shock resistance	acc. to IEC 60068-2-27 (15g/11 ms/half-sine/1000 shocks; 25g/6 ms /1000 shocks), EN 50155, EN 61373
EMC immunity to interference	acc. to EN 61000-6-1, -2, EN 61131-2, marine applications, EN 50121-3-2, -4, -5, 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, EN 50121-3-2, EN 50121-4, -5
Exposure to pollutants	Per IEC 60068-2-42 and IEC 60068-2-43
Permissible H <sub>2</sub> S contaminant concentration at a relative humidity 75 %	10 ppm
Permissible SO <sub>2</sub> contaminant concentration at a relative humidity 75 %	25 ppm

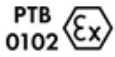
## Commercial data

Country of origin	DE
GTIN	4055143673587
Customs Tariff No.	85389099990


## Approvals / Certificates

### Ex-Approvals



Logo	Approval	Additional Approval Text	Certificate name

	<p>ATEX TUEV Nord Cert GmbH</p>	<p>EN 60079-0</p>	<p>TUEV 17 ATEX 193969X</p>
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	<p>IECEX TUEV Nord Cert GmbH</p>	<p>IEC 60079-0</p>	<p>IECEX TUN 16.0046X</p>
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	<p>UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)</p>	<p>ANSI/ISA 12.12.01</p>	<p>E198726 Sec.1</p>
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Ship Approvals




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

















UL-Approvals
















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




















Compatible products

system box

	<p><b>Item no.: 850-804</b> IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 4 x M20, 16 x M16, 28 x M12 cable grip</p>	<p>850-804</p>
	<p><b>Item no.: 850-804/000-001</b> IP65 enclosure; Stainless steel; WxHxD (400x123x200 mm); 2 x M20, 13 x M16, 32 x M12 cable grip</p>	<p>850-804</p>
	<p><b>Item no.: 850-805</b> IP65 enclosure; Stainless steel; WxHxD (600x123x200 mm); 4 x M20, 19 x M16, 67 x M12 cable grip</p>	<p>850-805</p>

	<b>Item no.: 850-814/002-000</b> IP65 enclosure; Sheet steel (RAL 7035); WxHxD (200x120x200 mm); without flange plate	/002-000	850-814
	<b>Item no.: 850-815/002-000</b> IP65 enclosure; Sheet steel (RAL 7035); WxHxD (300x120x200 mm); without flange plate	/002-000	850-815
	<b>Item no.: 850-816/002-000</b> IP65 enclosure; Sheet steel (RAL 7035); WxHxD (400x120x200 mm); without flange plate	/002-000	850-816
	<b>Item no.: 850-817/002-000</b> IP65 enclosure; Sheet steel (RAL 7035); WxHxD (600x120x200 mm); without flange plate	/002-000	850-817
	<b>Item no.: 850-825</b> IP65 enclosure; Aluminium (RAL 7032); WxHxD (160x100x160 mm); 9 x M12, 4 x M20		850-825
	<b>Item no.: 850-826</b> IP65 enclosure; Aluminium (RAL 7032); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip		850-826
	<b>Item no.: 850-826/002-000</b> IP65 enclosure; Aluminium (RAL 7035); WxHxD (240x100x160 mm); 4 x M20, 4 x M16, 14 x M12 cable grip	/002-000	850-826
	<b>Item no.: 850-827</b> IP65 enclosure; Aluminium (RAL 7032); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip		850-827
	<b>Item no.: 850-827/002-000</b> IP65 enclosure; Aluminium (RAL 7035); WxHxD (320x100x160 mm); 4 x M20, 8 x M16, 17 x M12 cable grip	/002-000	850-827
	<b>Item no.: 850-828</b> IP65 enclosure; Aluminium (RAL 7032); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip		850-828
	<b>Item no.: 850-828/002-000</b> IP65 enclosure; Aluminium (RAL 7035); WxHxD (480x100x160 mm); 4 x M20, 10 x M16, 35 x M12 cable grip	/002-000	850-828
	<b>Item no.: 850-834</b> IP65 enclosure; Polyester (RAL 7032); WxHxD (164x100x164 mm); 9 x M12, 4 x M20		850-834
	<b>Item no.: 850-835</b> IP65 enclosure; Polyester (RAL 7032); WxHxD (244x100x164 mm); 4 x M20, 4 x M16, 14 x M12 cable grip		850-835
	<b>Item no.: 850-836</b> IP65 enclosure; Polyester (RAL 7032); WxHxD (324x100x164 mm); 4 x M20, 8 x M16, 17 x M12 cable grip		850-836
<b>Marking accessories</b>			
	<b>Item no.: 2009-145</b> Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type		2009-145
	<b>Item no.: 2009-145/000-002</b> Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-002	2009-145

	<b>Item no.: 2009-145/000-005</b> Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-005	2009-145
	<b>Item no.: 2009-145/000-006</b> Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-006	2009-145
	<b>Item no.: 2009-145/000-007</b> Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-007	2009-145
	<b>Item no.: 2009-145/000-012</b> Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-012	2009-145
	<b>Item no.: 2009-145/000-023</b> Mini-WSB Inline; for smartPRINTER; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-023	2009-145
	<b>Item no.: 2009-145/000-024</b> Mini-WSB Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-024	2009-145
	<b>Item no.: 248-501</b> Miniature WSB Quick marking system; plain; Marker width 5 mm; 10 strips with 10 markers per card		248-501
	<b>Item no.: 248-501/000-002</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type	/000-002	248-501
	<b>Item no.: 248-501/000-005</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type	/000-005	248-501
	<b>Item no.: 248-501/000-006</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type	/000-006	248-501
	<b>Item no.: 248-501/000-007</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type	/000-007	248-501
	<b>Item no.: 248-501/000-012</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type	/000-012	248-501
	<b>Item no.: 248-501/000-017</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type	/000-017	248-501
	<b>Item no.: 248-501/000-023</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type	/000-023	248-501
	<b>Item no.: 248-501/000-024</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type	/000-024	248-501

	<b>Item no.: 750-103</b> Group marker carrier	750-103
	<b>Item no.: 750-107</b> Group marker carrier	750-107
<b>Carrier rail</b>		
	<b>Item no.: 210-112</b> 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
	<b>Item no.: 210-113</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715	210-113
	<b>Item no.: 210-114</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715	210-114
	<b>Item no.: 210-115</b> 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
	<b>Item no.: 210-118</b> Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715	210-118
	<b>Item no.: 210-196</b> Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715	210-196
	<b>Item no.: 210-197</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715	210-197
	<b>Item no.: 210-198</b> Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715	210-198
	<b>Item no.: 210-504</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715	210-504
	<b>Item no.: 210-505</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715	210-505
	<b>Item no.: 210-506</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715	210-506
	<b>Item no.: 210-508</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715	210-508
<b>shield connection</b>		
	<b>Item no.: 790-108</b> Shield clamping saddle; 11 mm wide; diameter of compatible conductor	790-108
	<b>Item no.: 790-116</b> Shield clamping saddle; 19 mm wide; diameter of compatible conductor; 7 ... 16 mm	790-116
	<b>Item no.: 790-124</b> Shield clamping saddle; 27 mm wide; diameter of compatible conductor; 6 ... 24 mm	790-124
	<b>Item no.: 790-140</b> Shield clamping saddle; diameter of compatible conductor	790-140
	<b>Item no.: 790-208</b> 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

## Downloads

### Documentation

#### Manual

Incremental encoder interface /XTR 24 VDC	V 1.0.0	pdf 1.2 MB	Download
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#### Bid Text

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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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750 XTR Series I/O-System – General Product Information		pdf 1.1 MB	Download
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System Manual /XTR Basic conditions and recommendations for higher operational safety	V 1.2.0	pdf 2.9 MB	Download
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### CAD/CAE - Smart Data

#### CAD data

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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.

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Subject to changes.

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