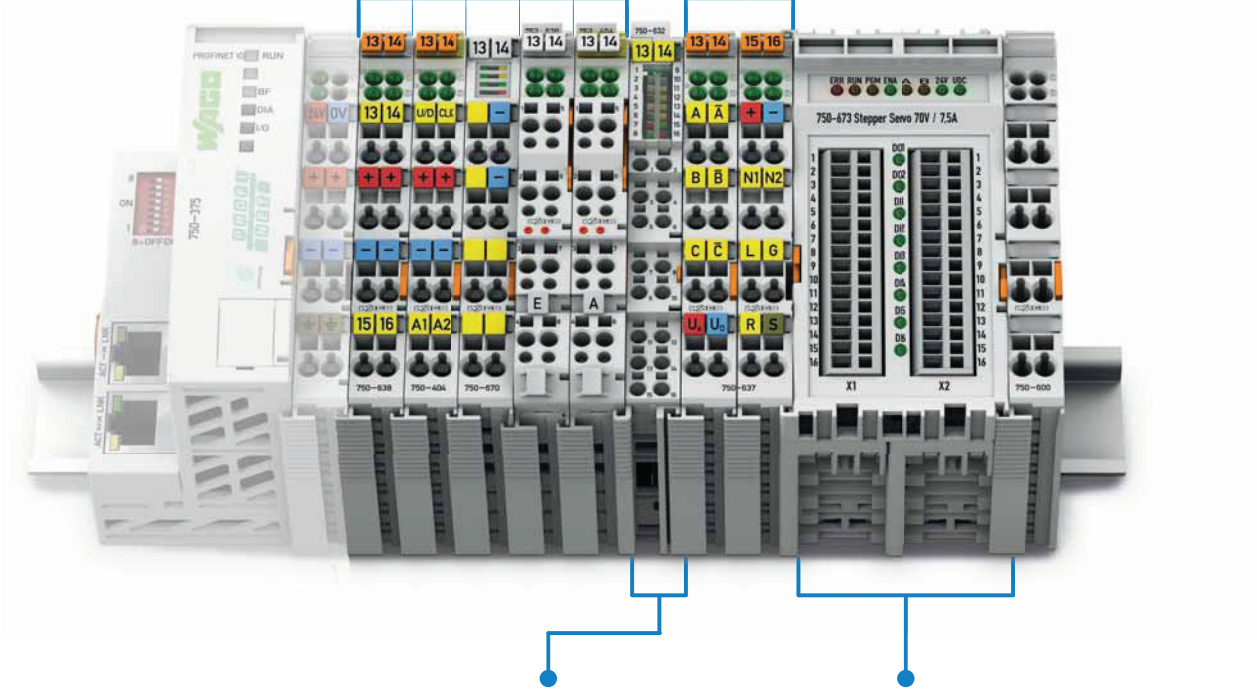
Housing Design 750/753 Series	
Dimensions (mm) W x H x L	12 x 65 x 100 (Height from upper edge of the DIN-rail)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / 28 ... 14 AWG
Strip lengths	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.

Housing Design Double Width	
Dimensions (mm) W x H x L	24 x 65 x 100 (Height from upper edge of the DIN-rail)



Housing Design 750 Series with CAGE CLAMPS®S Connection (16 Connection Terminals)	
Dimensions (mm) W x H x L	12 x 65 x 100 (Height from upper edge of the DIN-rail)
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm² ... 2.5 mm² / 28 ... 16 AWG fine-stranded: 0.25 mm² ... 1.5 mm² / 22 ... 16 AWG
Strip lengths	8 ... 9 mm / 0.33 in.

Special Housing Design 750 Series	
Dimensions (mm) W x H x L	51 x 70 x 100 (Height from upper edge of the DIN-rail)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / 28 ... 14 AWG
Strip lengths	5 ... 6 mm / 0.22 in.

Function	Description	Item No.			Page
		Standard	/T Extended operating temperature range: -20 °C ... +60 °C	Pluggable	
Counter Modules	Up/Down Counter, 24 VDC, 100 kHz	750-404		753-404	292
	Up Counter/Enable Input	750-404/000-001			292
	Peak Time Counter	750-404/000-002			292
	Frequency Counter 0.1 Hz - 100 kHz	750-404/000-003		753-404/000-003	292
	Up/Down Counter/Switch Output	750-404/000-004			292
	2 Up Counter/16 bits / 5 kHz	750-404/000-005			292
	Up/Down Counter, 24 VDC/16 bits /500 Hz	750-638	750-638/025-000	753-638	293
Pulse Width Modules	2DO 24V DC 0.1A/Pulse Width	750-511			294
	2DO 24V DC 0.1A/Frequency/2kHz	750-511/000-001			294
	2DO 24V DC 0.1A/Pulse Width/100Hz	750-511/000-002			294
Distance and Angle Measurement Modules	SSI Transmitter Interface, 24 bits, 125 kHz, gray	750-630			295
	SSI Transmitter Interface, 24 bits, 125 kHz, bin	750-630/000-001			295
	SSI Transmitter Interface, 24 bits, 250 kHz, bin	750-630/000-002			295
	SSI Transmitter Interface, 24 bits, 125 kHz, gray, status	750-630/000-004			295
	SSI Transmitter Interface, 15 bits, 125 kHz, gray, status	750-630/000-005			295
	SSI Transmitter Interface, 24 bits, 250 kHz, gray	750-630/000-006			295
	SSI Transmitter Interface, 24 bits, 83 kHz, gray, status	750-630/000-007			295
	SSI Transmitter Interface, 25 bits, 125 kHz, gray	750-630/000-008			295
	SSI Transmitter Interface, 13 bits, 250 kHz, bin	750-630/000-009			295
	SSI Transmitter Interface, 25 bits, 125 kHz, bin	750-630/000-011			295
	SSI Transmitter Interface, 13 bits, 125 kHz, gray	750-630/000-012			295
	SSI Transmitter Interface, 29 bits, 125 kHz, bin	750-630/000-013			295
	SSI Transmitter Interface, configurable	750-630/003-000			295
	Inkremental Encoder Interface RS-422	750-631/000-004			296
	Inkremental Encoder Interface	750-637			297
	Inkremental Encoder Interface, 24 V, 32 bits differential	750-637/000-001			297
	Inkremental Encoder Interface, 24 V, 32 bits single ended	750-637/000-002			297
	Inkremental Encoder Interface, RS-422, 32 bits, single interpreter	750-637/000-003			297
	Inkremental Encoder Interface, 24 V, 32 bits single ended, cam outputs	750-637/000-004			297
	Digital Impulse Interface	750-635		753-635	298
RTC Module	RTC Module, Real-Time Clock	750-640			299
Vibration Monitoring	2-Channel Vibration Velocity/Bearing Condition Monitoring VIB I/O	750-645			300
Stepper Modules	Stepper Controller RS-422, 24 V, 20 mA	750-670			302
	Stepper Controller 24 V, 1,5 A	750-671			303
	Stepper Controller 70 V, 7,5 A, 6 IN, 2 OUT	750-672			304
	Servo Stepper Controller 70 V, 7,5 A, 6 IN, 2 OUT	750-673			306
DC-Drive Controllers	DC-Drive Controller, 24 V, 5 A	750-636	750-636/025-000		308
	DC-Drive Controller, 24 V, 5 A, external motor voltage	750-636/000-700			308
	DC-Drive Controller, 24 V, 5 A, interference-free	750-636/000-800			308
Proportional Valve Module	Proportional Valve Module	750-632			310
Ex i		see Section 4.9			

Up/Down Counter 24 V DC, 100 kHz

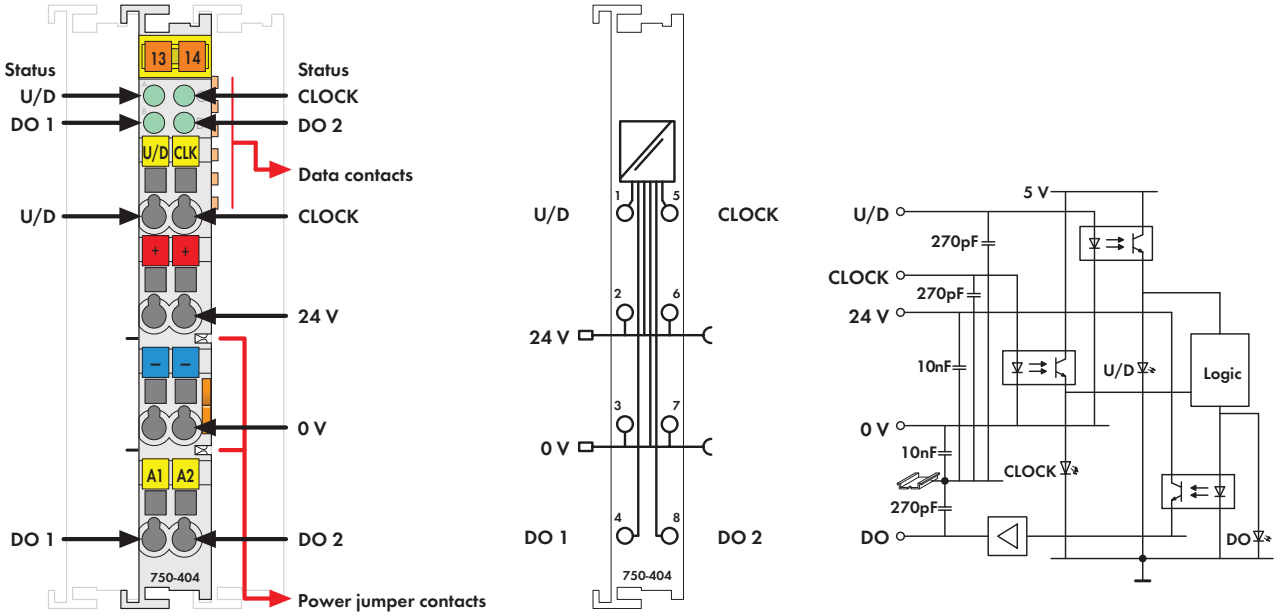


Fig. 750 Series
Delivered without miniature WSB markers

The up/down counter is capable of counting binary pulses of 24VDC and then transmits the data to the fieldbus.

The U/D input allows either Up or Down counting.

Digital outputs DO 1 and DO 2 can be set using the control byte.

The counter can be set or reset with the control byte.

A counter lock-out is also possible.

Differing technical data 750-404/000-003
- Measuring error < ± 0.2 % (measuring range 0.1 Hz ... 10 kHz)
- Measuring error < ± 1.5 % (measuring range 0.1 Hz ... 100 kHz)

Differing technical data 750-404/000-005
- Switching rate max. : 5 kHz
- Counter depth: 2 x 16 bits
- Internal bit width: 2 x 16 bits data

Description	Item No.	Pack. Unit
Up/Down Counter/100 kHz	**750-404**	1
Up Counter/Enable Input	**750-404/000-001**	1
Counter with enable input (Gate), U/D input serves as Gate input		
Peak Time Counter	**750-404/000-002**	1
Frequency Counter 0.1 Hz - 100 kHz	**750-404/000-003**	1
Frequency measurement, U/D input serves as Gate input		
Up/Down Counter/Switch Output	**750-404/000-004**	1
Counter with digital outputs (output switches depending on the count of the counter)		
2 Up Counter/16 Bit / 5 kHz	**750-404/000-005**	1
U/D input serves as Clock input of the 2nd counter		
Up/Down Counter, 100 Hz (without connector)	**753-404**	1
Frequency Counter 0.1 Hz - 100 kHz	**753-404/000-003**	1
(without connector)		
Frequency measurement, U/D input serves as Gate input		

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system	see Section 11	

Approvals

Conformity marking	CE
Korea Certification	
Marine applications (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

Technical Data

No. of outputs	2
No. of counters	1
Current consumption (internal)	70 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Output current	0.5 A short-circuit protected
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Max. switching frequency	100 kHz
Input current (typ.)	5 mA
Counter depth	32 bits
Isolation	500 V system/supply
Internal bit width	32 bits data
	8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications

2-Channel Up/Down Counter 24 V DC, 500 Hz

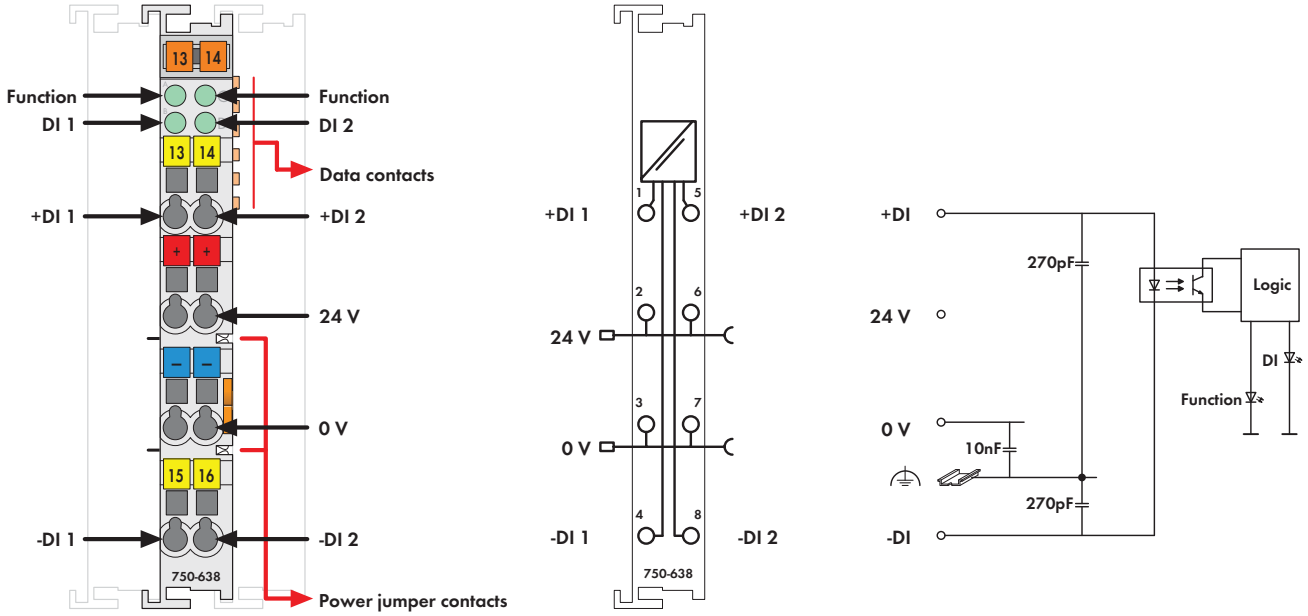


Fig. 750 Series
Delivered without miniature WSB markers

The I/O module has two counters that count 24VDC binary pulses independently of one another. The data is then transmitted to the control via the fieldbus.

The counters can be set or reset with the control bytes. A counter lock-out is also possible.

The control bytes also determine the direction of counting.

Description	Item No.	Pack. Unit
2-Channel Up/Down Counter, 500 Hz	**750-638**	1
2-Channel Up/Down Counter, 500 Hz/T	**750-638/025-000**	1
Extended temperature range: -20 °C ... +60 °C		
2-Channel Up / Down Counter, 500 Hz (without connector)	**753-638**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see Section 11	

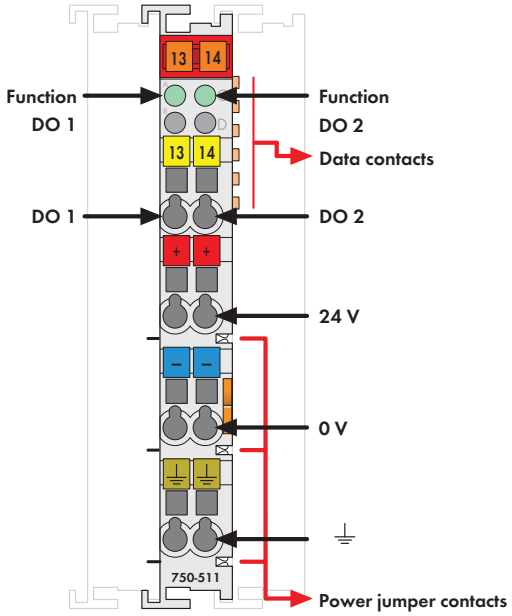
Approvals

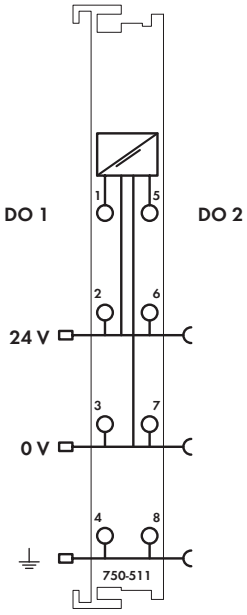
Conformity marking	CE
Korea Certification	
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 12.1297 X (Brasilien)	Ex nA IIC T4 Gc (750-638)
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

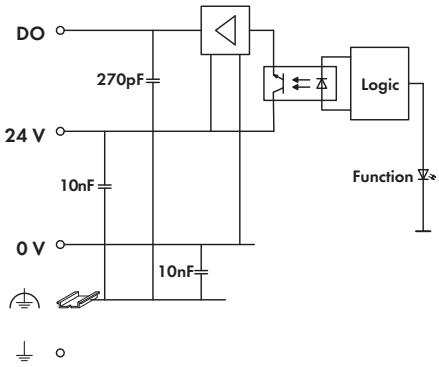
Technical Data

No. of counters	2
Current consumption typ. (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal voltage (0)	-3 V ... +5 V DC (acc. to EN 61131 type 1)
Signal voltage (1)	15 V ... 30 V DC (acc. to EN 61131 type 1)
Common mode voltage (max.)	500 V DC
Minimum pulse width (0, 1)	1 ms
Input filter	0.2 ms
Sensor connection	differential
Max. switching frequency	500 Hz
Counter depth	16 bits
Isolation	500 V system/supply
Current consumption typ. (field side)	8 mA
Internal bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	58 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-4

2-Channel Pulse Width Output Module 24 V DC







Delivered without miniature WSB markers

This output module is able to modulate an output with a resolution of 16 bits, with a constant frequency. The field side is electrically isolated from the bus system.

The pulse-width repetition rate is given by a 16-bit value.

The outputs are short-circuit proof.

Actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 24V DC 0.1A/Pulse Width	**750-511**	1
2DO 24V DC 0.1A/Frequency/2kHz	**750-511/000-001**	1
Frequency counter, pulse frequency/pulse duty factor 2 Hz ... 2 kHz / 50 %		
2DO 24V DC 0.1A/Pulse Width/100Hz	**750-511/000-002**	1
Pulse frequency 100 Hz		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

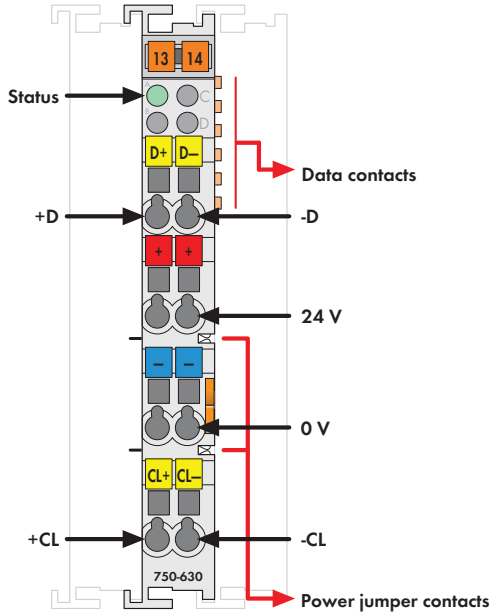
Approvals

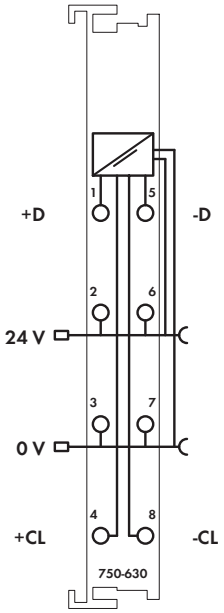
Conformity marking	CE
Korea Certification	
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

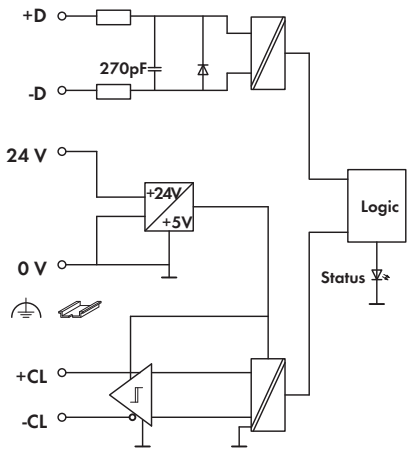
Technical Data

No. of outputs	2
Current consumption (internal)	70 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Output current	0.1 A short-circuit protected
Type of load	resistive, inductive
Pulse frequency	250 Hz
Pulse duty factor	0 % ... 100 %
Resolution	10 bits
Isolation	500 V system/supply
Current consumption typ. (field side)	15 mA
Internal bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	38 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-4

SSI Transmitter Interface







Delivered without miniature WSB markers

This module is an SSI interface for the direct connection to an SSI transmitter.

After the interface has given a clock pulse to the sensor, the interface reads the incoming data and transmits it directly in the form of a data word into the process image of the PLC or PC. It is possible to factory adjust different operating modes, transfer frequencies and bit widths by means of the control register.

The power supply for the transmitter is derived internally from the power jumper contacts.

Description	Item No.	Pack. Unit
SSI/ 24Bit/ 125kHz/ Gray	**750-630**	1
SSI/ 24Bit/ 125kHz/ Bin	**750-630/000-001**	1
SSI/ 24Bit/ 250kHz/ Bin	**750-630/000-002**	1
SSI/ 24Bit/ 125kHz/ Gray/ Status	**750-630/000-004**	1
SSI/ 15Bit/ 125kHz/ Gray/ Status	**750-630/000-005**	1
SSI/ 24Bit/ 250kHz/ Gray	**750-630/000-006**	1
SSI/ 24Bit/ 83kHz/ Gray/ Status	**750-630/000-007**	1
SSI/ 25Bit/ 125kHz/ Gray	**750-630/000-008**	1
SSI/ 13Bit/ 250kHz/ Bin	**750-630/000-009**	1
SSI/ 25Bit/ 125kHz/ Bin	**750-630/000-011**	1
SSI/ 13Bit/ 125kHz/ Gray	**750-630/000-012**	1
SSI/ 29Bit/ 125kHz/ Bin	**750-630/000-013**	1
SSI/ Configurable	**750-630/003-000**	1

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	

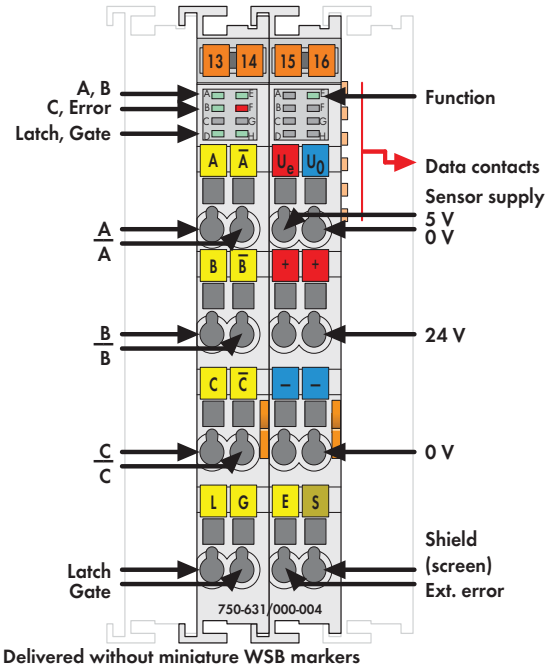
Approvals

Conformity marking	CE
Korea Certification	
Marine applications (versions upon request)	GL
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

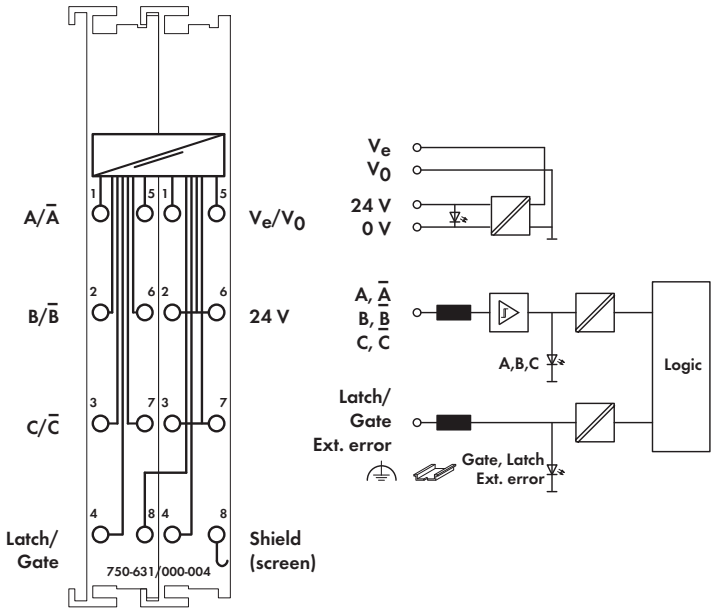
Technical Data

Sensor connection	In + D, -D / Out + CI, - CI
Current consumption typ. (internal)	20 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Sensor supply	24 V DC via power jumper contacts
Baud rate	125 kHz (max. 250 kHz
	750-630/003-000)
serial input	32 bits (bit width)
Signal output	differential signal (RS 422)
Signal input	differential signal (RS 422)
Code	Graycode
Isolation	500 V system/supply
Internal bit width	1 x 32 bits
	1 x 8 bits control/status (option)
	(24 bits data, 8 bits reserved)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	46.5 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications

Incremental Encoder Interface



Delivered without miniature WSB markers



This module is an interface for connection of any incremental encoder.

A 16 bit counter with quadrature encoder interface as well as a 16 bit latch for the zero impulse can be read, set, or enabled. The count of the counter will be transmitted fast and interference-free over the fieldbus to the PC, PLC, or NC.

A counter lock-out is possible using input G.

The power supply for the transmitter is derived internally from the power jumper contacts Ue/U0.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
Incremental Encoder Interface RS-422	**750-631/000-004**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

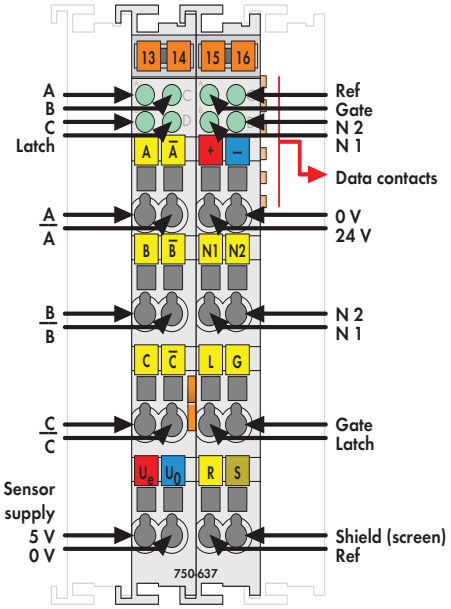
Approvals

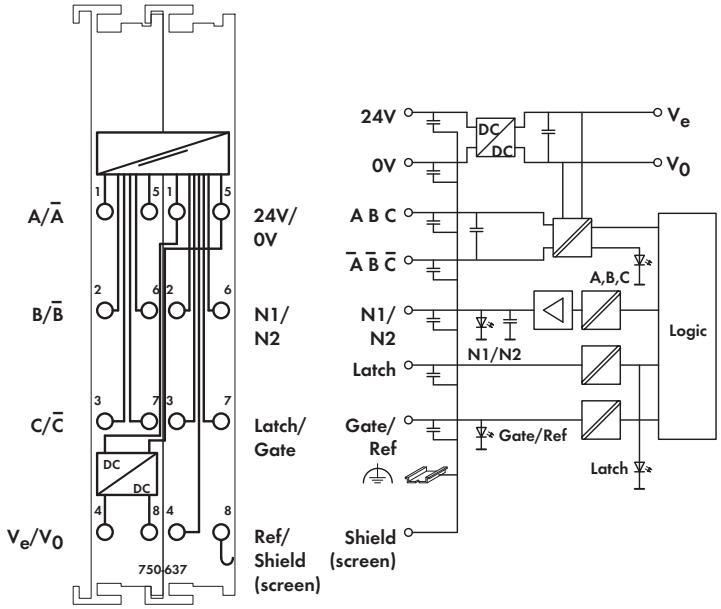
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
DEKRA 11 ATEX 0203 X	II 3 G Ex nA II T4

Technical Data

Sensor connection	A, A/, B, B/, C, C/ (RS-422 inputs)
Current consumption (internal)	50 mA
Counter	16 bits binary
Max. operating frequency	1000 kHz
Quadrature decoder	4-fold report
Zero impulse latch	16 bits
Commands	read, set, enable
Power supply	24 V DC (-15 % ... +20 %)
Current consumption (typ.)	10 mA without sensor
Operating voltage of sensor	5 VDC
Sensor max. output current	200 mA
Signal voltage (0)	V_{ABC} = 0 V, $V_{ABC/}$ = 5 V Latch, Gate ≤ 5.0 V, Ext. error V ≥ 5.0 V or input open
Signal voltage (1)	V_{ABC} = 5 V, $V_{ABC/}$ = 0 V Latch, Gate ≥ 15.0 V, Ext. error V < 0.5 V
Isolation	500 V system/supply
Internal bit width	1 x 32 bits data, 1 x 8 bits control/status, 1 x 8 bits reserved
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	100 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-4

Incremental Encoder Interface





Delivered without miniature WSB markers

This module is an interface for any incremental encoder with an RS-422 connection.

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 frequency data is automatically acquired and can also be transmitted to the control.

A counter lock-out is possible using input G. 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.

The module must be powered using an external 24VDC power supply, from which power to the transmitter (Ue, U1) can also be derived.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
Incremental Encoder Interface	**750-637**	1
Incremental Encoder Interface	**750-637/000-001**	1
24 V/32 Bit differential		
Incremental Encoder Interface	**750-637/000-002**	1
24 V/32 Bit single ended		
Inkremental-Encoder-Interface	**750-637/000-003**	1
RS422/32Bit/Single Interpreter		
Incremental Encoder Interface	**750-637/000-004**	1
24 V/32 Bit single ended/cam outputs		

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	

Approvals

Conformity marking	CE
Korea Certification	
Marine applications (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 12.1297 X (Brasilien)	Ex nA IIC T4 Gc (750-637)
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

Technical Data

Sensor connection	A, A/, B, B/, C, C/
Current consumption (internal)	110 mA
Counter	32 bits binary
Max. operating frequency	250 kHz
Quadrature decoder	4-fold report
Zero impulse latch	32 bits
Commands	read, set, enable
Power supply	24 V DC (-15 % ... +20 %)
Current consumption (typ.)	35 mA without load
Operating voltage of sensor	5 VDC
Sensor max. output current	300 mA
Internal bit width	1 x 32 bits data
	1 x 8 bits control/status
Digital outputs (N1, N2)	
Output voltage	24 V DC
Output current (max.)	0.5 A short-circuit protected
Digital inputs (Latch, Gate, Ref)	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input current (typ.)	Latch 5 mA, Gate 7 mA, Ref. 7 mA
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	103.3 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications

Digital Impulse Interface

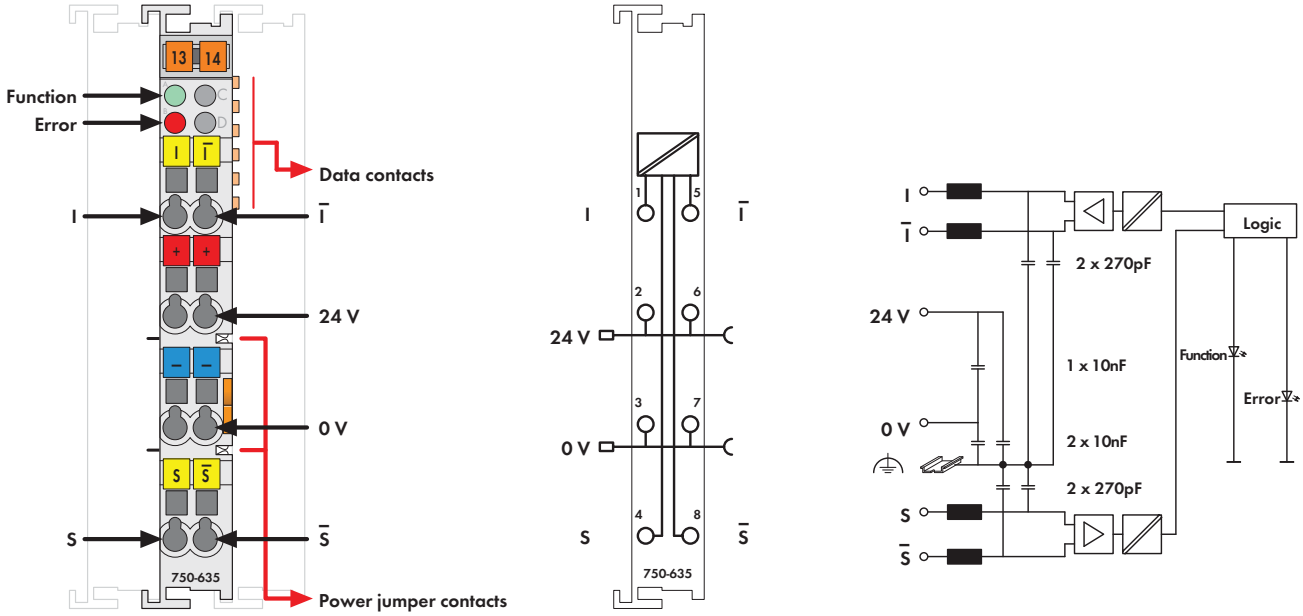


Fig. 750 Series
Delivered without miniature WSB markers

The digital impulse interface is designed for the connection of magnetostrictive distance measurement sensors with a start/stop interface. After receiving a read pulse, these sensors deliver a time-delayed reply impulse. The time delay is proportional to the sensor distance.

Each sensor may have up to four position transmitters (permanent magnets). Their position data can be accessed serially by the control. The position data is stored in the process image of the fieldbus coupler as a 24-bit value.

The parameterization of the ultrasonic speed and the transmission points is done via the control byte. The parameters can be changed during operation.

The transmission of the impulses is done with RS-422 differential drivers which guarantees trouble-free data transmission.

Distance sensors with the following features can be used: Start/Stop interface with RS-422 differential signals, sensor supply 24 V, manufacturer: e.g., Balluff

Description	Item No.	Pack. Unit
Digital Impulse Interface	**750-635**	1
Digital Impulse Interface (without connector)	**753-635**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see Section 11	

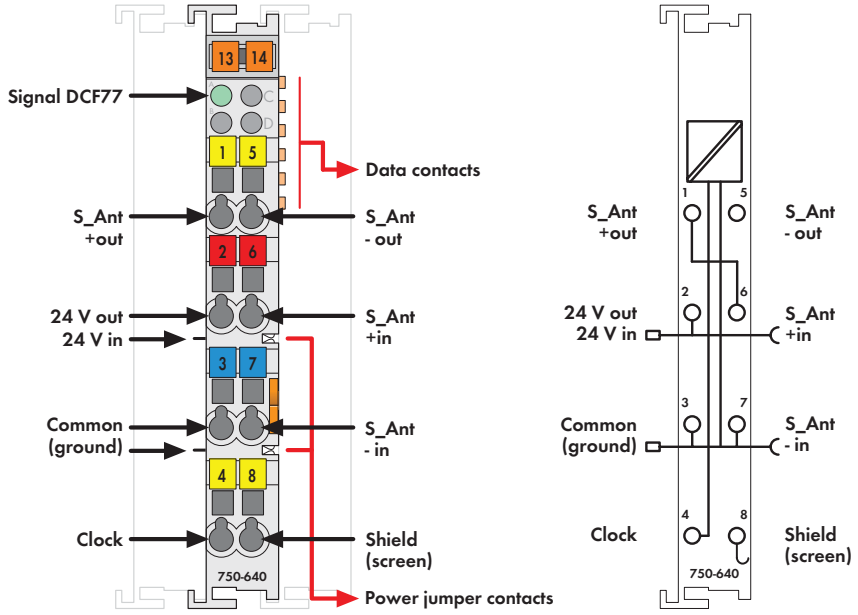
Approvals

Conformity marking	CE
Korea Certification	
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 12.1297 X (Brasilien)	Ex nA IIC T4 Gc (750-635)
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

Technical Data

Sensor connection	Start/Stop; Init; Vv; ground connection of the shield via the housing of the sensor
Number of inputs	1
Current consumption (internal)	45 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Data transmission	RS 422
Signal output	differential signal (RS-422)
Signal input	differential signal (RS-422)
Resolution	1 µm
Hysteresis	depends on the distance sensor
Update time	2 ms
Distance sensor length	≤ 4 m
Line length (max.)	500 m
Isolation	500 V system/supply
Internal bit width	1 x 24 bits data
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-4

RTC Module



Delivered without miniature WSB markers

The 750-640 RTC Module provides the higher-level control system with the actual time.
The time is buffered and continues to run in the event of a power failure. When an external receiver is connected, the clock can be set using the time signal from DCF77, WWVB, or MSF.
By default the module is set to receive DCF77 signals.
The receiver can be supplied directly via the module.
Connecting an external receiver to operate the RTC module is not absolutely necessary.

With its 32 channels, the integrated time switch clock function makes it easier for the control unit to process time-triggered actions.
The module also counts the power-on time of the 32 channels.

Description	Item No.	Pack. Unit
RTC module	**750-640**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

Approvals

Conformity marking	CE
Korea Certification	
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

Technical Data

Current consumption (internal)	< 20 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Clock	
Accuracy (+25 °C)	< 1 min/month
Accuracy (+10 °C ... +40 °C)	< 2 min/month
Accuracy (-25 °C ... +85 °C)	< 7 min/month
Drift	< 2 min/year
Buffer length	> 6 days
Clock Timer	
Number of channels	32
Switching points	32 (per 32 channels on/off)
Signal voltage (0)	-24 V ... +1 V
Signal voltage (1)	3 V ... 24 V
Open-circuit voltage	4 VDC
Input filter	10 ms
Input current (typ.)	< 5 mA (at 24 V)
	< 1 mA (at 5 V)
Supply $S_{ant, in}$	5 V ... 24 V DC
Isolation	500 V system/supply
Current consumption typ. (field side)	11 mA + load
Internal bit width	1 x 40 bits data (in/out)
	(5 bytes user data)
	1 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

Condition Monitoring

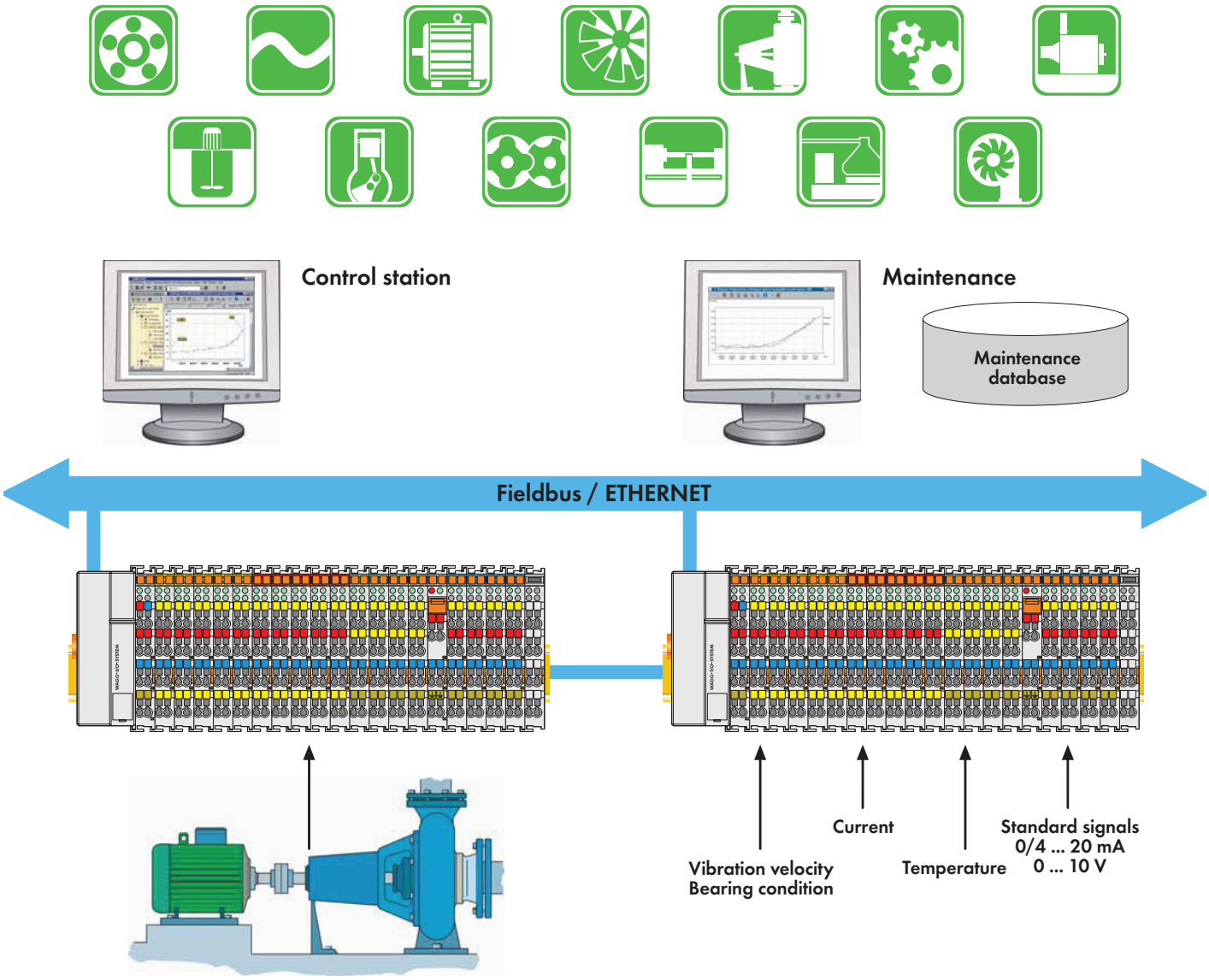
Growing cost pressure in global competition forces companies to use existing cost reduction potential and to boost efficiency to an increasing extent. Concerning service and maintenance, this implies provision of guaranteed trouble-free production processes, to avoid unplanned machine downtime and to use machine life to full capacity.

In order to achieve these goals, it is vital to implement online conditioning monitoring systems: errors can be diagnosed in time, maintenance measures can be scheduled optimally and unexpected machine breakdowns can be avoided.

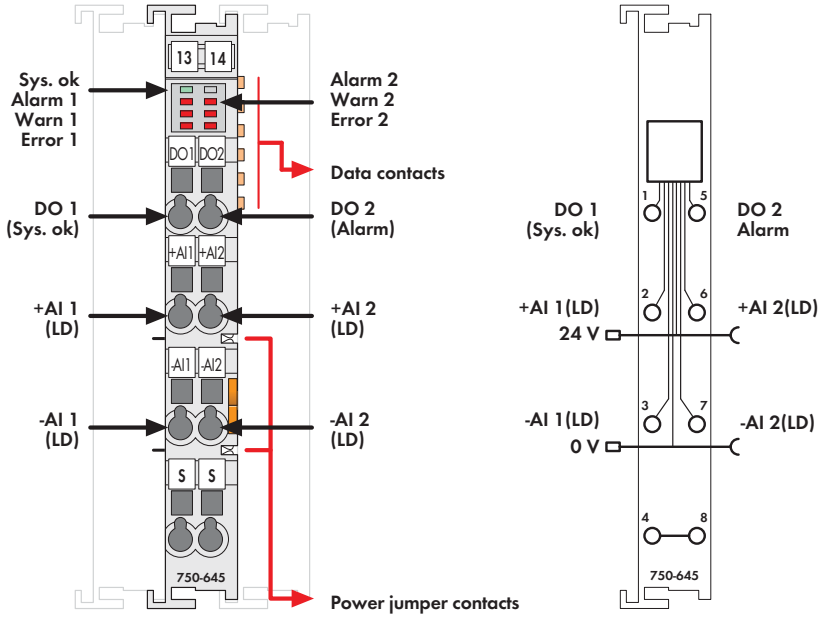
Consistent machine health monitoring via fieldbus thus allows prognostic analysis and reaction before damage occurs.

WAGO offers I/O modules for use with the WAGO-I/O-SYSTEM that receive and process parameters such as current, temperature, standard signals or machine vibration.

Typical application areas are in standard machines like electric motors, ventilators, pumps, air conditioning systems, etc.



2-Channel Vibration Velocity/Bearing Condition Monitoring VIB I/O



Delivered without miniature WSB markers

The VIB I/O modules are used for online monitoring of the machine vibration level. It records the two most important parameters required for the condition analysis; vibration severity and roller bearing condition.

The severity of vibration is a measurement of the machine vibration energy and therefore, a suitable indicator for the vibration forces acting on the machine. The ISO 10816-3 standard is used to assess the results in which the effective values of the (measured) vibration are divided into three quality categories.

The roller bearing condition is evaluated on the basis of high-frequency shock impulse signals. Shock impulses are momentary impulses arising from mechanical damage to roller bearings or the bearing surfaces.

Evaluation uses a scale where the measured shock impulses are divided into three bearing condition categories: 'good', 'limited' and 'poor'. By recording the measurement results and evaluation in a trend curve, bearing damage can be detected at an early stage.
A special Tandem-Piezo® acceleration sensor at the same time, provides the measurement of machine vibrations and high-frequency shock impulse signals.

Description	Item No.	Pack. Unit
2AI/2DO VIB VRMS/SPM Multi	**750-645**	1

Accessories		Item No.	Pack. Unit
Tandem-Piezo sensor		**750-925**	1
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

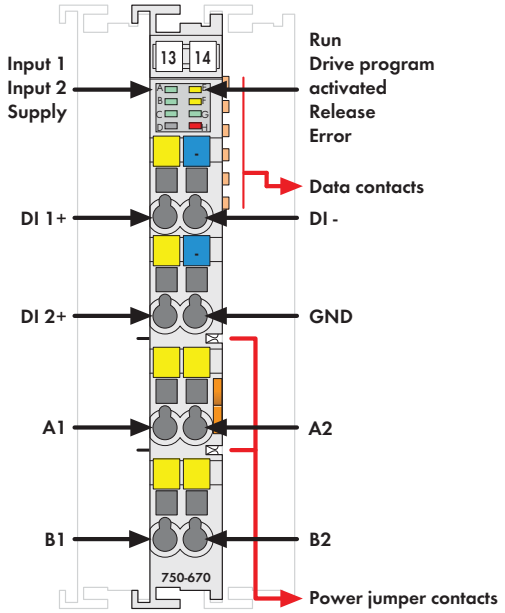
Approvals

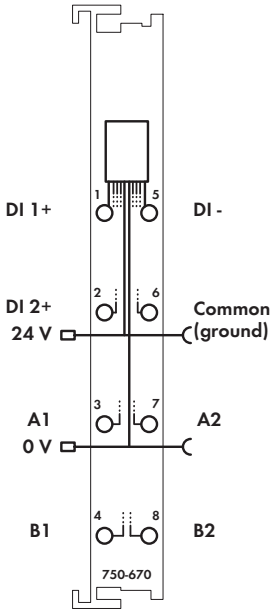
Conformity marking	CE
Korea Certification	
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

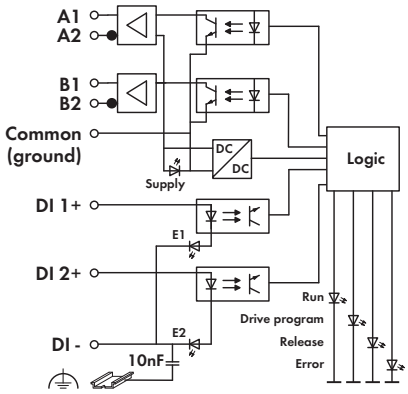
Technical Data

Sensor inputs	+AI1, -AI1, +AI2, -AI2
Number of inputs	2
Input ranges	
Vibration velocity	0 - 100mm/s
Shock pulse	-10 ... +80 db_{SV}
No. of outputs	2 (Alarm and System ok)
Configuration	Alarm and warning threshold via process image and I/O Check
Outputs	24 V DC 0.5 A short-circuit protected
Current consumption typ. (KBUS)	30 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Isolation	500 V system/supply
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

Stepper Controller RS-422 / 24 V / 20 mA







Delivered without miniature WSB markers

The 750-670 module is an intelligent stepper controller used to control different drive power sections with pulse/direction interface or incremental encoder input.
RS-422 and 24V or 20mA interfaces can be used.
Due to the high output frequency, stepper output stages with smooth microstepping resolution can be used.
In addition, this module can also be used as a high-precision frequency or pulse width modulator.
Two configurable inputs for Start/Stop, limit switches, reference cams, Jog/Tip, etc., are evaluated directly and without any further delay by the internal software.
Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses
The programmer's interface is the same for all WAGO stepper controller modules.
Additional operating modes:

- Pulse width modulation
- Frequency Generator
- Single-shot mode

Description	Item No.	Pack. Unit
Stepper controller RS-422 / 24 V / 20 mA	**750-670**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

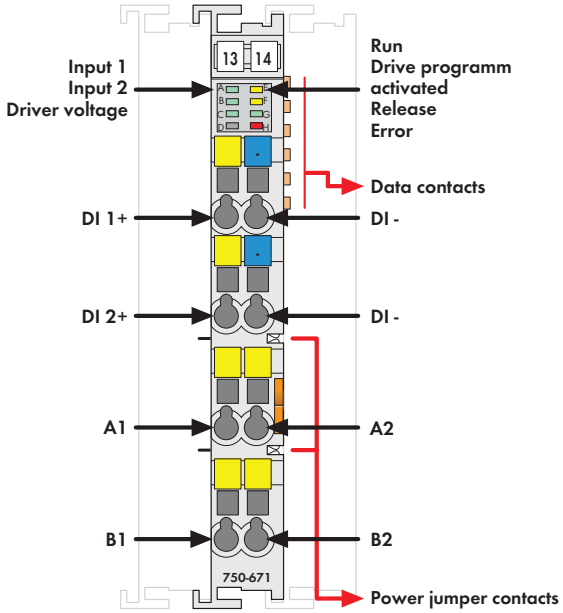
Approvals

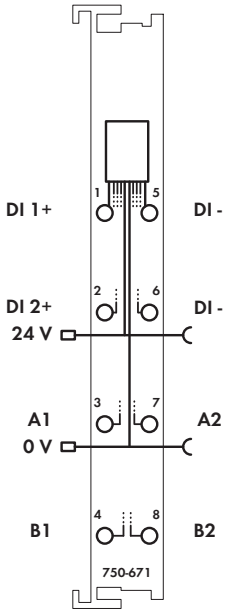
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb, II 3 G Ex nA IIC T4 Gc, II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb, Ex nA IIC T4 Gc, Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

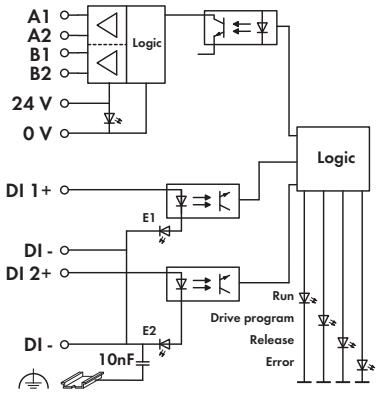
Technical Data

Outputs	
No. of outputs	1 channel (2 differential outputs A1, A2, B1, B2)
Signal voltage	5 V DC internal, 5 V ... 24 V DC external
Type of load	RS 422, TTL, optocoupler
Output current (max.)	30 mA short-circuit protected
Output frequency	200 µHz ... 500 kHz
Pulse duty factor	50 % (in stepper motor mode)
Inputs	
Number of inputs	2 (DI 1, DI 2)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Module	
Operation modes	Individual positioning, reference run, jog, tip, instruction tables, PWM
Functions	Positioning (absolute/relative), flying setpoint change, rotary axis, etc.
Resolution	
Distance	23 bits + sign bit
Speed	15 bits + 16 bit prescaler
Acceleration	15 bits + 16 bit prescaler
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current consumption typ. (KBUS)	98 mA
Isolation	500 V system/supply
Internal bit width	12 byte inputs/outputs
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	49.6 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

Stepper Controller 24 V / 1.5 A







Delivered without miniature WSB markers

The 750-671 module is an intelligent stepper controller with on-board power driver designed to control 2-phase stepper motors up to 24V/1.5A.
The 64 times microstepping prevents step losses due to resonance in the acceleration phases and prevents excessive wear on mechanical parts.
Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation.
Two configurable inputs for Start/Stop, limit switches, reference cams, Jog/Tip, etc., are evaluated directly and without any further delay by the internal software.

Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses
The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Stepper controller 24 V/1.5 A	**750-671**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

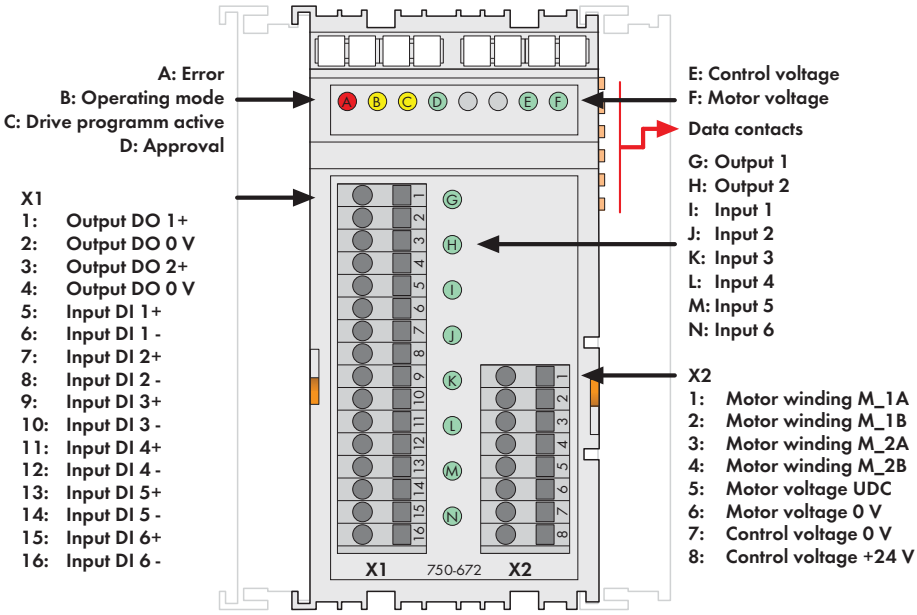
Approvals

Conformity marking	CE
Ex TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

Technical Data

Outputs	
No. of outputs	1 stepper motor (2 phases/bipolar)
Max. stepper frequency	7812 Hz at 64 microstepping internal
Output current (max.)	up to 2 x 1.5 A peak value; 1 A eff.
Inputs	
Number of inputs	2 (DI 1, DI 2)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Module	
Operation modes	Individual positioning, reference run, jog, tip, instruction tables
Functions	Positioning (absolute/relative), flying setpoint change, rotary axis, etc.
Resolution	
Distance	23 bits + sign bit
Speed	15 bits + 16 bit prescaler
Acceleration	15 bits + 16 bit prescaler
Microstepping	64 steps
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Power supply	via system voltage DC/DC
Current consumption typ. (KBUS)	85 mA
Isolation	500 V system/supply
Internal bit width	12 byte inputs/outputs
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51.8 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

Stepper Controller 70 V / 7.5 A 6IN, 2OUT



Delivered without miniature WSB markers

The 750-672 is an intelligent stepper controller with on-board power driver and incremental encoder evaluation to control 2-phase stepper motors up to 70V/7.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation. Six configurable inputs for Start/Stop, limit switches, reference cams, Jog/Tip, etc., are evaluated directly and without any further delay by the internal software. Two outputs can be linked with internal functions or used freely.

Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses. The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Stepper Controller 70 V / 7.5 A 6IN, 2OUT	**750-672**	1

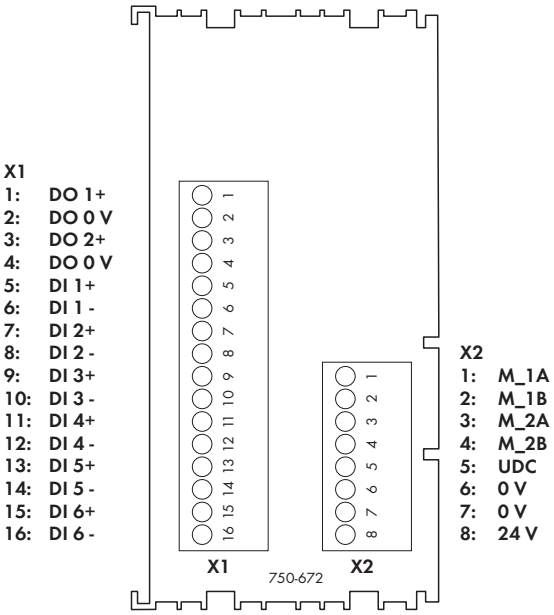
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

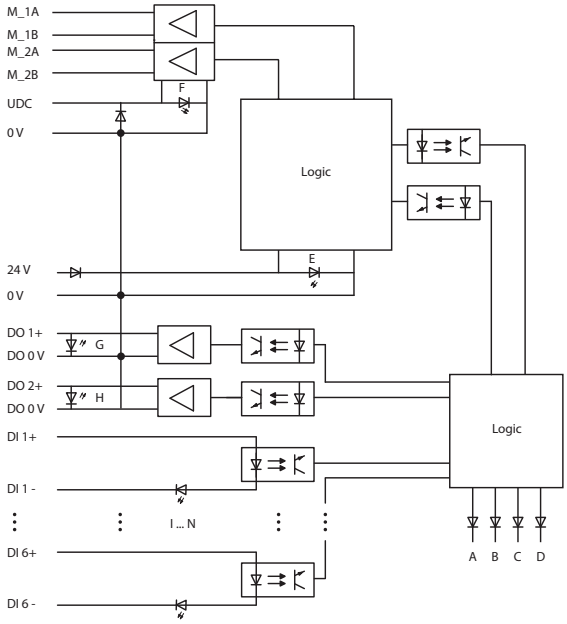
Approvals

Conformity marking	CE
Korea Certification	

Technical Data

Power supply	**Control voltage**:
	24 V DC (-25 % ... +30 %),
	Closed current 120 mA + 2 x 0.5 A
	(DO1, DO2, load-dependent);
	Motor voltage:
	Nominal value 55 V DC,
	Absolute upper limit: 71.5 V,
	Absolute lower limit: 18 V,
	Closed current typ. = 5 mA,
	Protection via external fuse 5 A
Protection	**Short circuit monitoring of motor**
	connections:
	Winding short circuit and short circuit to
	0 V and 24 V;
	24 V supply:
	Reverse voltage protection;
	Motor supply:
	Reverse voltage protection via external fuse
Isolation	500 V system/supply
Voltage supply (internal)	via internal data bus and control voltage
Current consumption typ. (internal)	70 mA
Internal bit width	12-byte inputs/outputs
Configuration	via PLC and WAGO-I/O-CHECK
	(configuration tool)





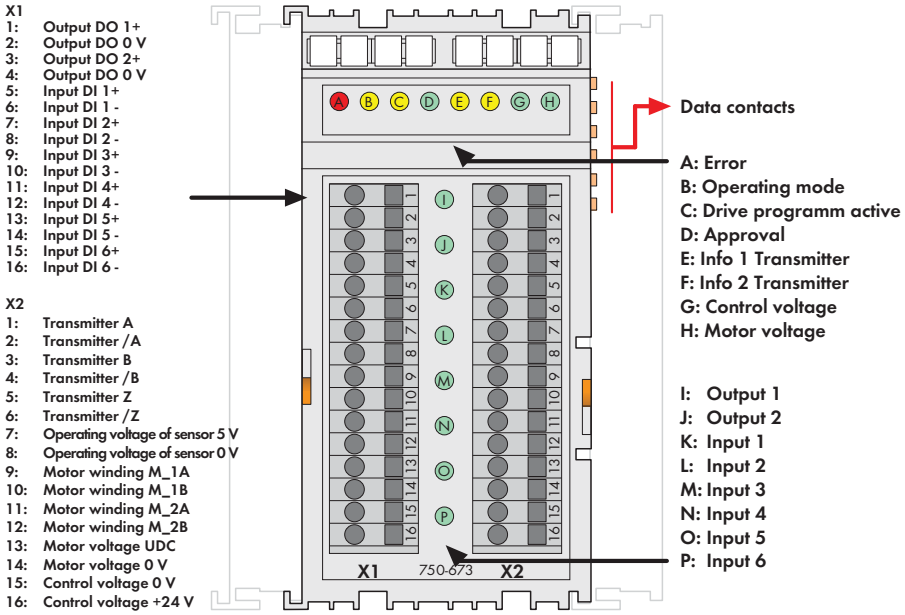
Technical Data

Inputs	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
	Electrical isolation from each other and
	from all other voltage potentials on the
	module
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Outputs	
No. of outputs	2 (DO1, DO2)
Output current	0.5 A, short-circuit protected
Max. switching frequency	5 Hz, inductive load to IEC947-5-1,
	DC13
Type of load	Resistive load,
	inductive load (max. 2H),
	lamps
Function	Inputs (preset):
	DI 1: Drive stop,
	DI 2: Reference input,
	DI 3: Jog switch in positive direction,
	DI 4: Jog switch in negative direction,
	DI 5: Limit switch in positive direction,
	DI 6: Limit switch in negative direction,
	Outputs (preset):
	DO 1: Target reached,
	DO 2: Error,
	Inputs and outputs can be freely
	reconfigured.
Motor connection	
No. of outputs	1 stepper motor (2 phases)
Output current (max.)	2 x 7.5 A temporary; derating starting at
	50 °C; 2 x 5.0 A nominal current; derating
	starting at 50 °C
Max. stepper frequency	7812 Hz full step
Diagnostics	Short circuit or ground fault overcurrent,
	overtemperature, supply voltage
	monitoring, motor wire break
Resolution	64 microsteps per full step
Cable length	30 m
	shielded cable

General Specifications

Operating temperature	0°C ... +55°C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Strip lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	51 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	56 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27/29
Degree of protection	IP20
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

Servo Stepper Controller 55 V / 7.5 A 6IN, 2OUT



Delivered without miniature WSB markers

The 750-673 is an intelligent servo stepper controller with on-board power driver and incremental encoder evaluation to control 2-phase stepper motors up to 70V/7.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and reduces wear on the mechanical parts. The controller features vector control that, together with the incremental encoder, contributes to an efficient and dynamic rotation speed characteristic. Six configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without delay. Two outputs can be linked with internal functions or used freely.

Versatile functions, such as positioning with different acceleration slopes, command tables, camshaft controller, auto referencing and other event-dependent properties provide this controller with a wide spectrum of possible uses. The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Servo Stepper Controller 55 V / 7.5 A	**750-673**	1

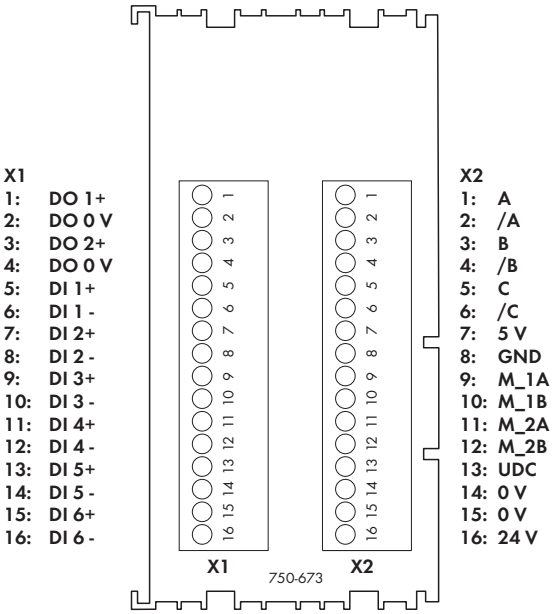
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

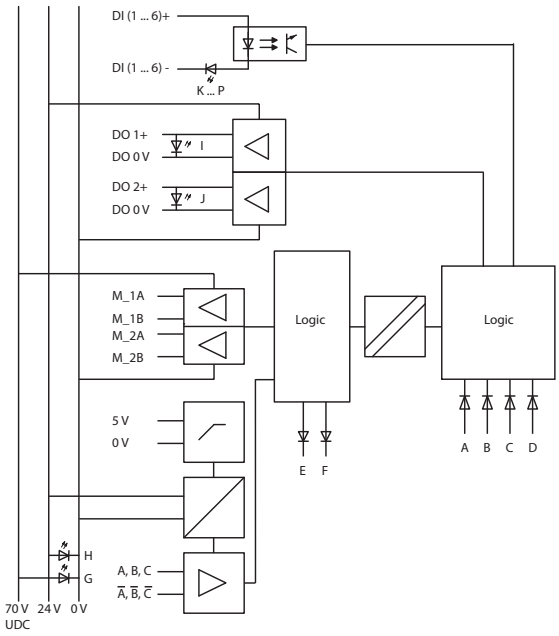
Approvals

Conformity marking	CE
Korea Certification	

Technical Data

Power supply	**Control voltage**:
	24 V DC (-25 % ... +30 %),
	Closed current 120 mA + 2 x 0.5 A
	(DO1, DO2, load-dependent) + approx.
	100 mA (encoder);
	Motor voltage:
	Nominal value 55 V DC,
	Absolute upper limit: 71.5 V,
	Absolute lower limit: 18 V,
	Closed current typ. = 5 mA,
	Protection via external fuse 5 A
Protection	**Short circuit monitoring of motor**
	connections:
	Winding short circuit and short circuit to
	0 V and 24 V;
	24 V supply:
	Reverse voltage protection;
	Motor supply:
	Reverse voltage protection via external fuse
Isolation	500 V system/supply
Voltage supply (internal)	via internal data bus and control voltage
Current consumption typ. (internal)	70 mA
Internal bit width	12-byte inputs/outputs
Configuration	via PLC and WAGO-I/O-CHECK
	(configuration tool)





Technical Data

Inputs	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
	Electrical isolation from each other and
	from all other voltage potentials on the
	module
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Outputs	
No. of outputs	2 (DO1, DO2)
Output current	0.5 A, short-circuit protected
Max. switching frequency	5 Hz, inductive load to IEC947-5-1,
	DC13
Type of load	Resistive load,
	inductive load (max. 2H),
	lamps
Function	Inputs (preset):
	DI 1: Drive stop,
	DI 2: Reference input,
	DI 3: Jog switch in positive direction,
	DI 4: Jog switch in negative direction,
	DI 5: Limit switch in positive direction,
	DI 6: Limit switch in negative direction,
	Outputs (preset):
	DO 1: Target reached,
	DO 2: Error,
	Inputs and outputs can be freely
	reconfigured.
Motor connection	
No. of outputs	1 stepper motor (2 phases)
Output current (max.)	2 x 7.5 A temporary; derating starting at
	50 °C; 2 x 5.0 A nominal current; derating
	starting at 50 °C
Max. stepper frequency	7812 Hz full step
Diagnostics	Short circuit or ground fault overcurrent,
	overtemperature, supply voltage
	monitoring, motor wire break, wrong
	rotational direction incremental encoder -
Resolution	64 microsteps per full step
Cable length	30 m
	shielded cable

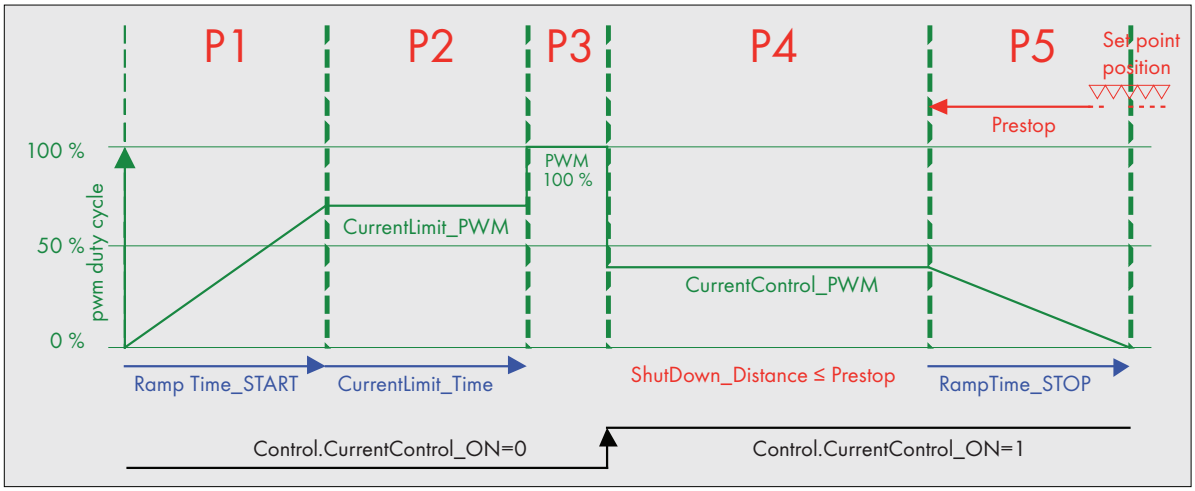
Technical Data

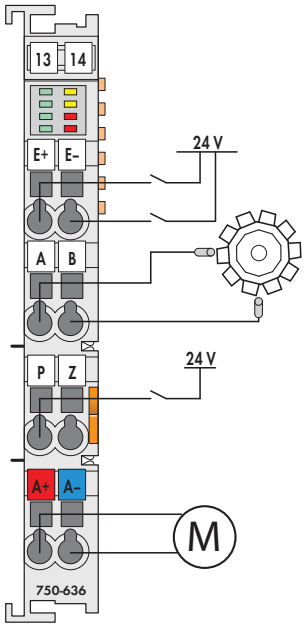
Incremental encoder	
Sensor connection	A, /A, B, /B, C, /C
Signal voltage	Compatible with RS-485/RS-422, common
	GND with motor voltage and control
	voltage
Sensor frequency	1 MHz
Terminating resistor	internal 120 Ω
Sensor supply	5 V DC, 300 mA short-circuit protected
Quadrature decoder	4-fold report
Counter	32 bits binary

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Strip lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	51 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	56 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27/29
Degree of protection	IP20
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

DC-Drive Controller 750-636 24V/5A



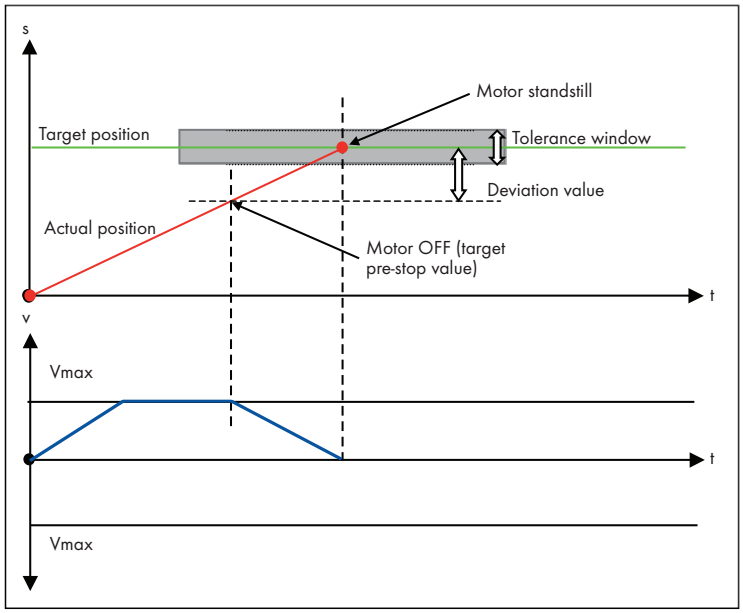


Features:

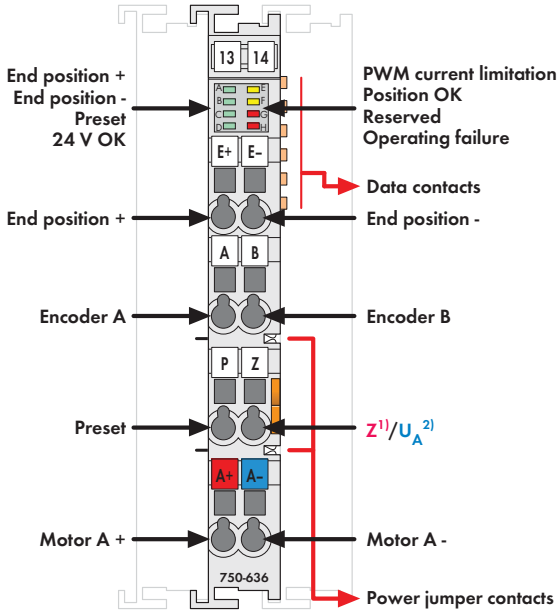
- Control of collector-based 24V/5A motors using 12mm/0.47in wide modules
- 5V/24V incremental encoder input
- Inputs for limit switch and preset (setting of reference point)
- Forward/backward run
- Inrush current up to 15A/500ms, temporary >30A
- Adaptive switch-off optimization (pre-stop distance)
- Adjustable soft start and stop
- Quick stop via coil short-circuit
- Current reduction (slow run) via PWM control
- Gear backlash compensation
- 32-bit position values
- Output stage monitoring via current and temperature monitoring (with pre-warning)
- PWM control and incremental encoder may be used independently
    - Power control for 24V loads
    - Incremental encoder module

Application area:

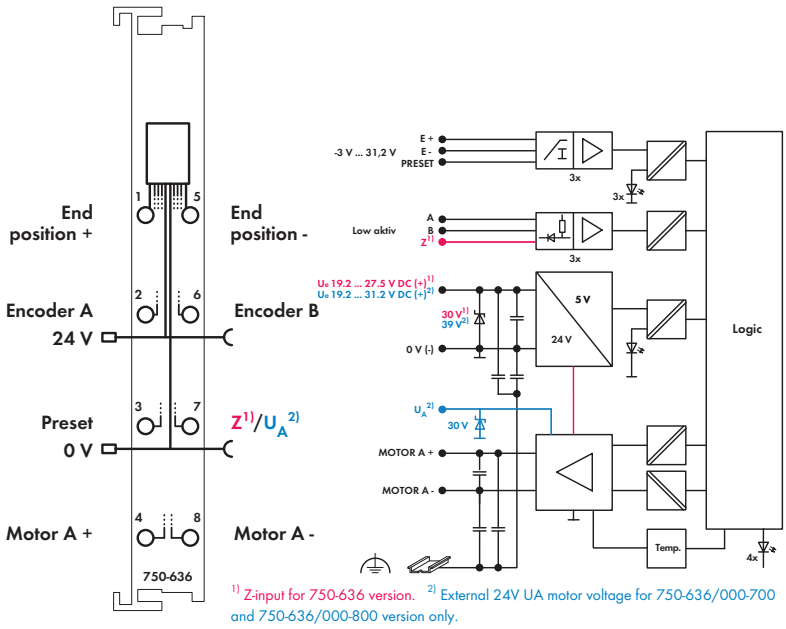
- ▸ Control and set-up functions for:
    - ▷ Width adjustments
    - ▷ Roller pressure
    - ▷ Pusher default setting
- ▸ Metering
- ▸ Vans



DC Drive Controller 24 V / 5 A



Delivered without miniature WSB markers



1) Z-input for 750-636 version. 2) External 24V UA motor voltage for 750-636/000-700 and 750-636/000-800 version only.

This module is a 1-channel intelligent positioning controller for 24V DC motors up to 5A with incremental position feeback. Three 24V inputs record the limit switches and a preset signal. An incremental encoder interface evaluates the signals from the position transmitter and determines actual value.
If required, the positioning optimizes the pre-stop position depending on direction and takes backlash compensation into account.
Bi-directional control of the DC motor is done via short-circuit proof and temperature-monitored H-bridge. Both switched operation and soft-start/stop or current reduction are possible through PWM control.

The field-side 24V supply voltage (20-28VDC) from the power contacts, which is monitored for undervoltage/overvoltage events, is looped through to adjacent modules.

Description	Item No.	Pack. Unit
DC Drive Controller 24V/5A	**750-636**	1
DC Drive Controller 24V/5A/T	**750-636/025-000**	1
Extended temperature range: -20 °C ... +60 °C		
DC Drive Controller 24 V / 5 A / V_A*	**750-636/000-700**	1
* V_A external motor voltage		
DC-Drive Controller 24V/5A/R*	**750-636/000-800**	1
* /R: Interference-free for safety function applications (see manual)		

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	

Approvals

Conformity marking	CE
Korea Certification	(750-636)

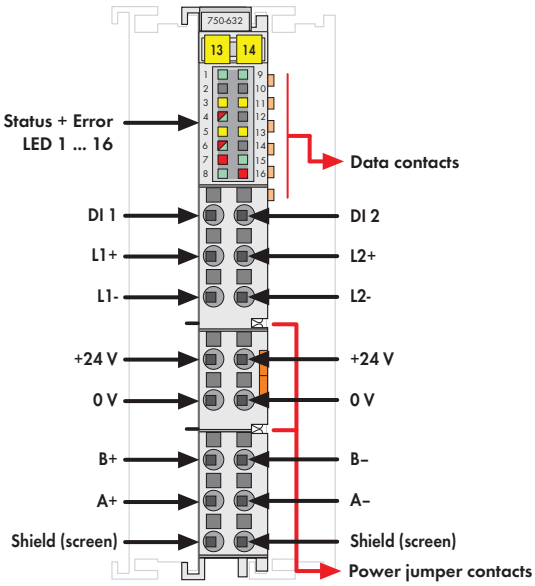
Technical Data

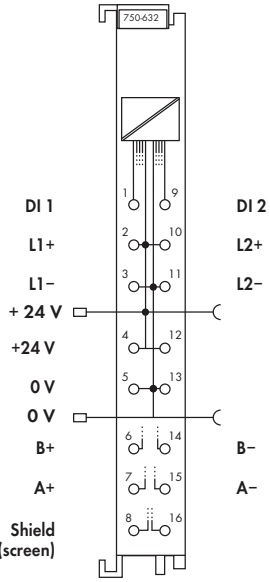
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	55.5 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

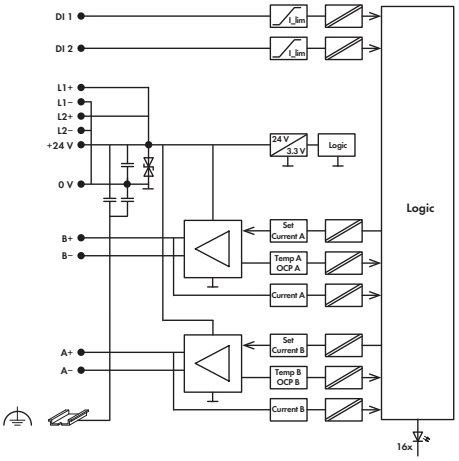
Technical Data

Outputs	
No. of outputs	1 channel
Motor current	5 A rated current at 33% ED,
	15 A / 500 ms
Motor connection	A+, A-, H-bridge output;
	short-circuit protected
PWM frequency (typ.)	20 kHz
Inputs:	
Digital inputs (E+, E-, Preset)	Type1 acc. to IEC61131;
	high-side switching
Input current (typ.)	2.7 mA at 24 V
Encoder connection	A, B, Zero low-side switching;
	5 V ... 24 V DC / open collector
Signal voltage (0)	-3 V ... +1.5 V DC
Signal voltage (1)	2.4 V ... 30 V DC
Input current (typ.)	-3.2 mA at +0.3 V; 0 mA at >+5 V
Max. operating frequency	50 kHz
Quadrature decoder	1-fold, 2-fold, 4-fold report
Module	
Current consumption typ. (KBUS)	55 mA
Current consumption typ. (field side)	
750-636:	12 mA + load
750-636/000-700:	10 mA (fieldside) and 2 mA + load (motor)
750-636/000-800:	10 mA (fieldside) and 2 mA + load (motor)
Supply voltage	
750-636:	19.2 V ... 27.5 V DC
750-636/000-700:	19.2 ... 27.5 VDC (V_A);
	19.2 ... 31.2 VDC (field side)
750-636/000-800:	19.2 V ... 27.5 V DC (V_A)
	19.2 V ... 31.2 V DC (fieldside)
Isolation	500 V system/supply
Data width process image	32 bits set/actual value;
	16 bits control or status

Proportional Valve Module







The 750-632 Proportional Valve Module controls two single-coil valves with up to 24V/1.6A, or one valve with up to 24V/2A. The module features two current-controlled PWM* outputs with adjustable dither.
Both unipolar and bipolar valve control are possible. Operating a valve with two unipolar coils is also possible via a single-channel module. Characteristic curve adaptations, such as zero offset, dual gain compensation or range limitations, can be adjusted via parameters.

Scaling and configurable up/down ramps permit set point adjustment to the application. For example, monitoring threshold value switches is performed via two additional digital inputs. Start-up and valve parameters adjustment are performed via WAGO-I/O-CHECK software or the controller.

*PWM = Pulse width modulation

Description	Item No.	Pack. Unit
Proportional Valve Module	**750-632**	1

Accessories	Item No.	Pack. Unit
WAGO-I/O-CHECK, RS-232 kit	**759-302**	1
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	

Approvals

Conformity marking	CE
Marine applications	GL
UL 508	
TÜV 14 ATEX 148929 X	II 3 G Ex nA IIC T4 Gc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 14.0035 X	Ex nA IIC T4 Gc
Permissible ambient temperature	0 °C ... +60 °C

Technical Data

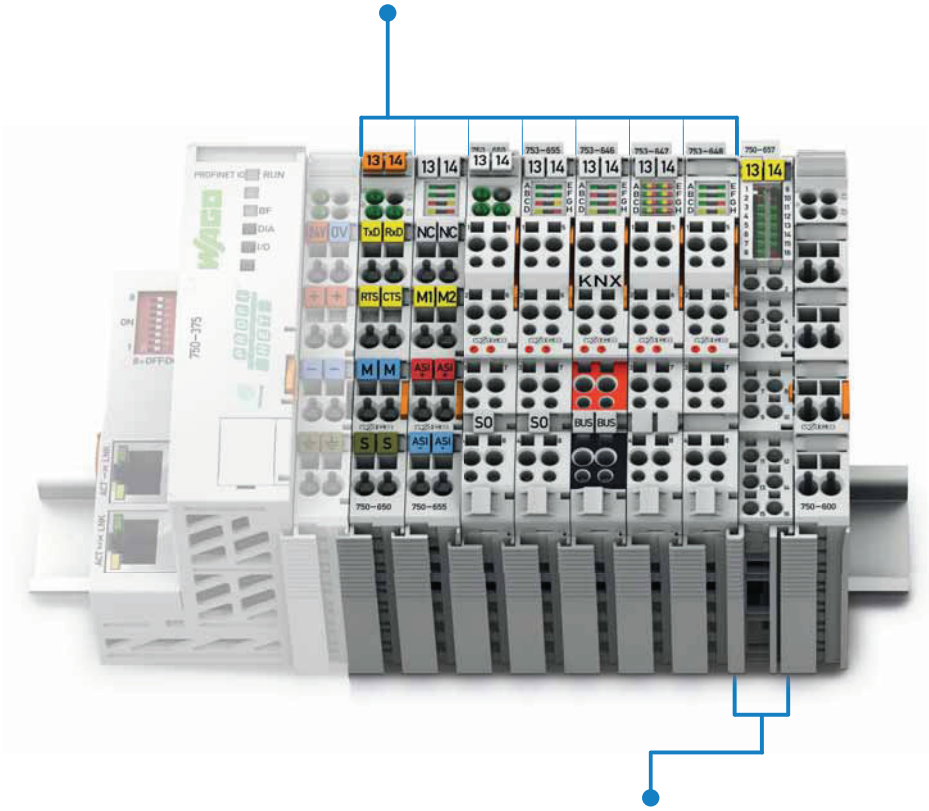
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.25 mm² ... 1.5 mm² / AWG 22 ... 14
	Coil terminals A+/A-/B+/B-:
	1.5 mm²/AWG 16
	For applications acc. to UL 508:
	AWG 16 for all terminals
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.7 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications

Technical Data

Outputs	
No. of outputs	2 bipolar outputs (A+, A- and B+, B-)
Output current (max.)	1-channel operation: 2 A (Derating must be observed); 2-channel operation: 1.6 A per channel (Derating must be observed)
Output type	H-bridge output with current-regulated PWM output (short-circuit proof and thermal overload-proof for each channel)
Dither frequency	250 Hz; 125 Hz; 62,5 Hz; ... 1 Hz (parameterizable)
PWM frequency (typ.)	50 kHz
Nominal output voltage	24 V DC (-25 % ... +30 %)
Type of load	Operating range: inductive (1 mH ... 600 mH); Internal load resistance (> 8 Ohm)
Inputs	
Number of inputs	2 (DI 1, DI 2), Type 1 acc. to IEC 61131; high-side switching
Input current	2.7 mA at 24 V
Module	
Max. current consumption (internal)	125 mA
Current consumption max. (field side)	20 mA + load
Supply voltage	24 V DC (-25 % ... +30 %)
Isolation	500 V system/supply
Data width process image	6 bytes: single-channel operating mode; 12 bytes: dual-channel operating mode

Communication Modules

Housing Design 750/753 Series	
Dimensions (mm) W x H x L	12 x 65 x 100 (Height from upper edge of the DIN-rail)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / 28 ... 14 AWG
Strip lengths	750 Series: 8 ... 9 mm / 0.33 in. 753 Series: 9 ... 10 mm / 0.37 in.



Housing Design 750 Series with CAGE CLAMPS®S Connection (16 Connection Terminals)	
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm² ... 2.5 mm² / 28 ... 16 AWG fine-stranded: 0.25 mm² ... 1.5 mm² / 22 ... 16 AWG
Strip lengths	8 ... 9 mm / 0.33 in.

Modular I/O-System Overview

Communication Modules

Function	Description	Item No.			Page
		Standard	/T Extended operating temperature range: -20 °C ... +60 °C	Pluggable	
Serial Interface	Serial Interface RS-232 C, 9600, N, 8, 1	750-650		753-650	314
	Serial Interface RS-232 C, 9600, N, 8, 1, 5 bytes	750-650/000-001			314
	Serial Interface RS-232 C, 9600, E, 7, 2	750-650/000-002			314
	Serial Interface RS-232 C, 4800, E, 7, 1	750-650/000-004			314
	Serial Interface RS-232 C, 9600, E, 8, 1	750-650/000-006			314
	Serial Interface RS-232 C, 2400, E, 8, 1	750-650/000-009			314
	Serial Interface RS-232 C, 19200, N, 8, 1	750-650/000-010			314
	Serial Interface RS-232 C, 19200, E, 8, 1	750-650/000-011			314
	Serial Interface RS-232 C, 2400, N, 8, 1	750-650/000-012			314
	Serial Interface RS-232 C, 4800, E, 7, 2	750-650/000-013			314
	Serial Interface RS-232 C, 4800, E, 8, 1	750-650/000-015			314
	Serial Interface RS-232 C, configurable	750-650/003-000		753-650/003-000	314
	Serial Interface RS-485, 9600, N, 8, 1	750-653	750-653/025-018	753-653	315
	Serial Interface RS-485, 9600, E, 7, 2	750-653/000-001			315
	Serial Interface RS-485, 9600, E, 8, 1	750-653/000-002			315
	Serial Interface RS-485, 19200, N, 8, 1, 5 bytes	750-653/000-006			315
	Serial Interface RS-485, 2400, N, 8, 1	750-653/000-007			315
	Serial Interface RS-485, configurable	750-653/003-000	750-653/025-000		315
	Serial Interface RS-232 C/RS-485	750-652	750-652/025-000	753-652	316
	TTY Interface, 9600, N, 8, 1	750-651			317
	TTY Interface, 9600, N, 8, 1, 5 bytes	750-651/000-001			317
	TTY Interface, 9600, E, 8, 1	750-651/000-002			317
Bluetooth	*Bluetooth*® RF Transceiver	750-644			318
EnOcean	Radio Receiver Module	750-642			319
KNX	KNX/EIB/TP1 Module			753-646	320
DALI	DALI Multi-Master Module			753-647	321
LON	LON FTT Module			753-648	322
MP-Bus	MP-Bus Master Module	750-643			323
AS-Interface Master	AS-Interface Master	750-655		753-655	324
IO-Link Master	IO-Link Master	750-657			326
CAN Gateway	CAN Gateway	750-658			328
Data Exchange	Data Exchange Module	750-654			329

Serial Interface RS-232 C

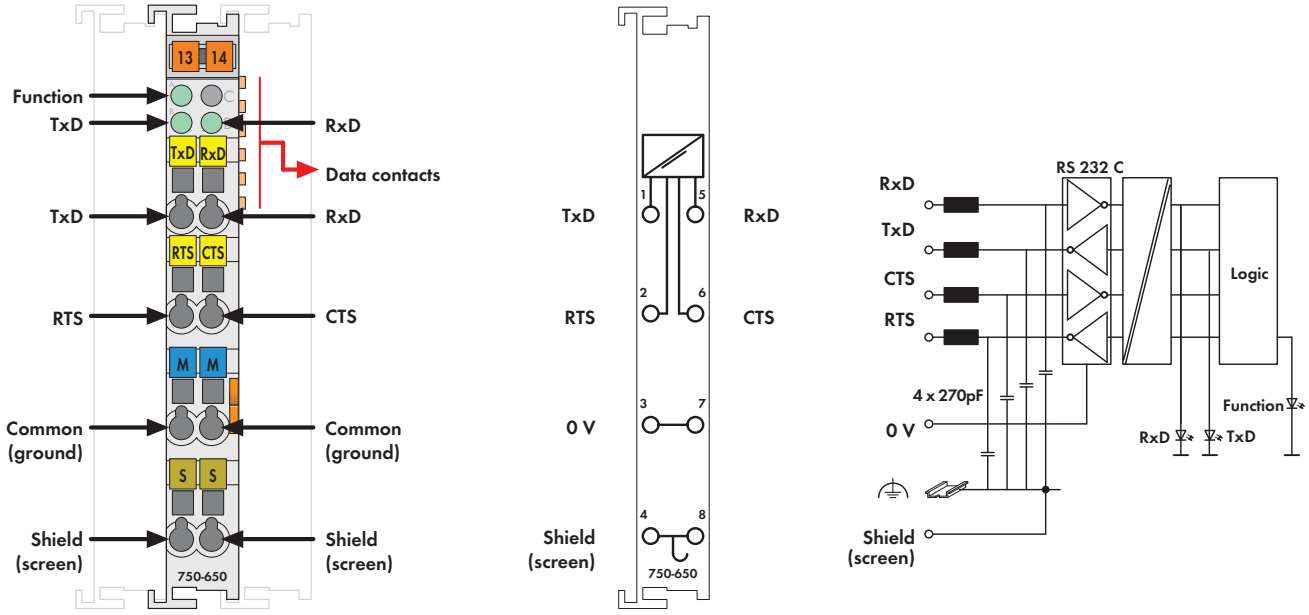


Fig. 750 Series
Delivered without miniature WSB markers

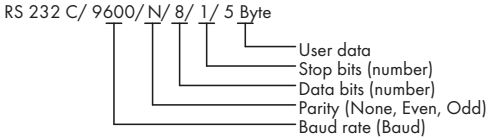
This interface allows the connection of any device which is equipped with a RS-232 C serial interface.

The interface works in accordance with the TIA/EIA-232-F, CCITT V.28/DIN 66259-1 standard.

The connected device may directly communicate over the fieldbus coupler with the control unit. The active communication channel works independently of the higher-level fieldbus system and allows full duplex operationup to 19200baud.

The RS-232 C interface guarantees high interference immunity because of the electrically isolated signals.

The shield (screen) is directly connected to the carrier rail.



Description	Item No.	Pack. Unit
RS-232 C/ 9600/ N/ 8/ 1	**750-650**	1
RS-232 C/ 9600/ N/ 8/ 1/ 5 Byte	**750-650/000-001**	1
RS-232 C/ 9600/ E/ 7/ 2	**750-650/000-002**	1
RS-232 C/ 4800/ E/ 7/ 1	**750-650/000-004**	1
RS-232 C/ 9600/ E/ 8/ 1	**750-650/000-006**	1
RS-232 C/ 2400/ E/ 8/ 1	**750-650/000-009**	1
RS-232 C/ 19200/ N/ 8/ 1	**750-650/000-010**	1
RS-232 C/ 19200/ E/ 8/ 1	**750-650/000-011**	1
RS-232 C/ 2400/ N/ 8/ 1	**750-650/000-012**	1
RS-232 C/ 4800/ E/ 7/ 2	**750-650/000-013**	1
RS-232 C/ 4800/ E/ 8/ 1	**750-650/000-015**	1
RS-232 C/ Configurable	**750-650/003-000**	1
RS-232 C Interface (without connector)	**753-650**	1
RS-232 C/ Configurable (without connector)	**753-650/003-000**	1

Approvals

Conformity marking	CE
Korea Certification	[1]
Marine applications (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

[1] Does not apply to 750-650/003-000

Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	9600 baud (factory preset)
	1200 ... 19200 baud
Bit skew	< 3 %
RS-232 line length (max.)	15 m
Buffer	128 bytes in/16 bytes out
Max. current consumption (internal)	55 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.5 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	

Serial Interface RS-485

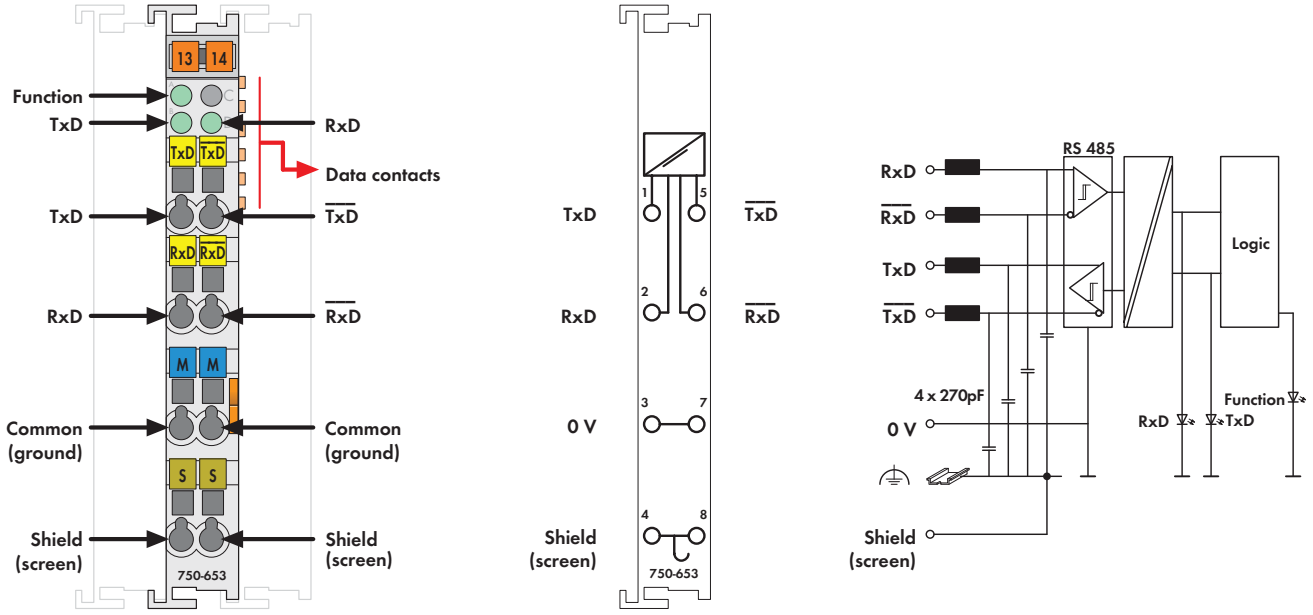


Fig. 750 Series
Delivered without miniature WSB markers

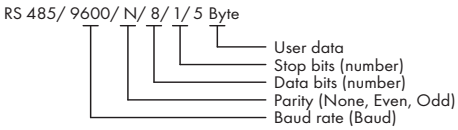
This interface allows the connection of any device which is equipped with a RS-485 serial interface.

The interface works inaccordance with the TIA/EIA-485-A, DIN 66259 standard.

The connected device may communicate over the fieldbus coupler with the control unit directly. The active communication channel works independently of the higher-level fieldbus system and allows full duplex operation up to 19200 baud.

The RS-485 interface guarantees high interference immunity because of the electrically isolated signals.

The shield (screen) is directly connected to the carrier rail.



Description	Item No.	Pack. Unit
RS-485/ 9600/ N/ 8/ 1	**750-653**	1
RS-485/ 9600/ E/ 7/ 2	**750-653/000-001**	1
RS-485/ 9600/ E/ 8/ 1	**750-653/000-002**	1
RS-485/ 19200/ N/ 8/ 1/ 5 bytes	**750-653/000-006**	1
RS-485/ 2400/ N/ 8/ 1	**750-653/000-007**	1
RS-485 / Configurable	**750-653/003-000**	1
RS-485 / Configurable/T	**750-653/025-000**	1
Extended temperature range: -20 °C ... +60 °C		
RS-485/ 9600/N/8/1/5 bytes/T	**750-653/025-018**	1
Extended temperature range: -20 °C ... +60 °C		
RS-485/ 9600/ N/ 8/ 1 (without connector)	**753-653**	1

Approvals

Conformity marking	CE
Korea Certification	[1]
Marine applications (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

[1] Does not apply to 750-653/000-007 and 750-653/025-018

Technical Data

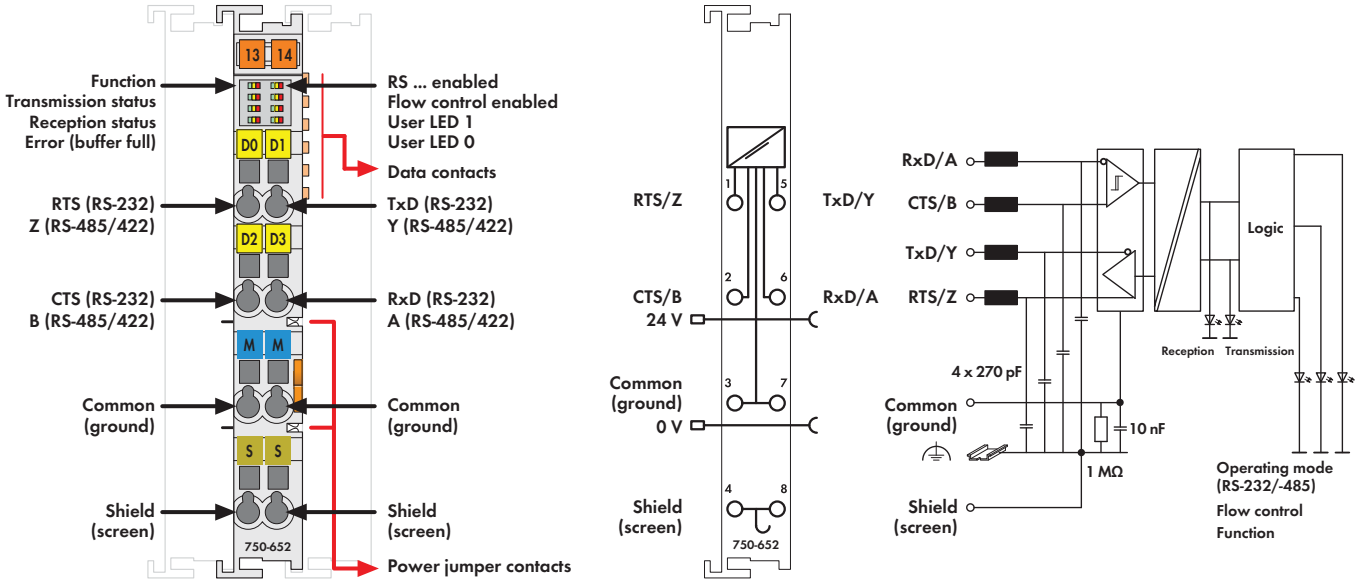
Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	9600 baud (factory preset)
	1200 ... 19200 baud
Bit transfer	ISO 8482 / DIN 66259 - 4
Line length	approx. 1000 m twisted pair
Buffer	128 bytes in/16 bytes out
Current consumption (internal)	65 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.7 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	

Serial Interface RS-232 / RS-485

Configurable



Delivered without miniature WSB markers

The serial interface module connects RS-485/422 or RS-232 interface devices to the WAGO-I/O-SYSTEM 750. It also provides gateways between the serial interface and the fieldbus systems supported by the WAGO-I/O-SYSTEM 750. No higher protocol level is required by the module. Communication is completely transparent to the fieldbus master, which provides a wide range of applications for the serial interface module. If required, communication protocols can be configured via fieldbus master.
The 2560-byte input buffer provides for high data transmission rates. At lower transmission rates, the data received in lower priority tasks is evaluated without data loss.
The 512-byte output buffer provides fast transmission of larger data strings.

The module can be configured via WAGO-I/O-CHECK or GSD files. Flexible baud rate and data width selection enable easy adaptation to applications.

Compatibility with couplers/controllers:
See manual, Section 3 "Device Description"

Description	Item No.	Pack. Unit
RS-232 / RS-485 configurable	**750-652**	1
RS-232 / RS-485 configurable/T	**750-652/025-000**	1
Extended temperature range: -20 °C ... +60 °C		
RS-232 / RS-485 configurable (without connector)	**753-652**	1

Accessories	Item No.	Pack. Unit
WAGO-I/O-CHECK, RS-232 kit	**759-302**	1
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	

Approvals

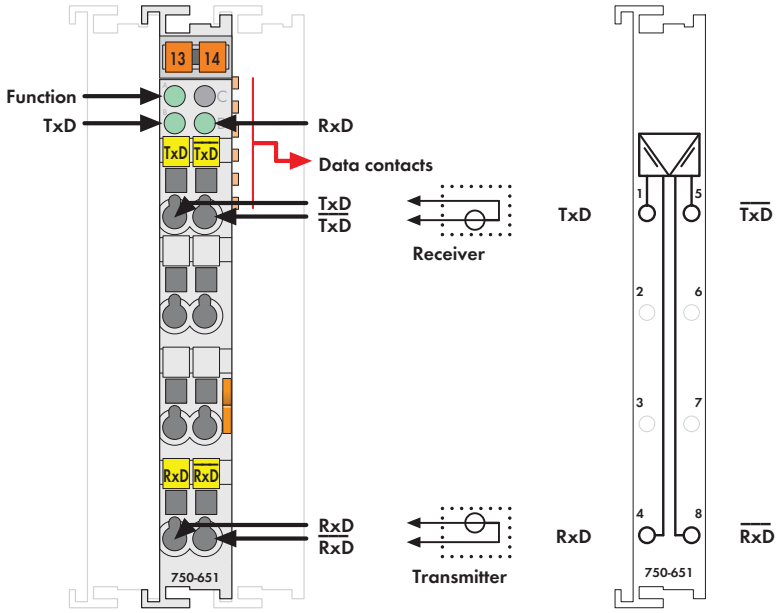
Conformity marking	CE
Korea Certification	[1]
Marine applications (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

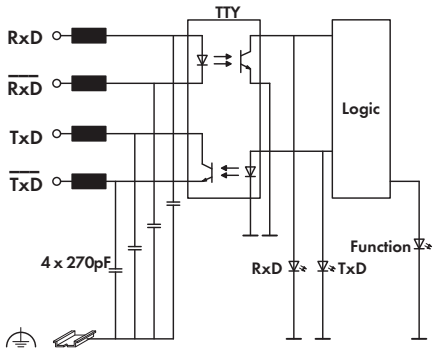
[1] Does not apply to 753-652

Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex, half duplex 7 or
	8 bit data, 1 or 2 stop bit
Baud rate	9,600 baud (default setting)
	300 baud ... 115,200 baud
Bit transfer	RS-485/-422: ISO 8482 /
	DIN 66259 - 4; RS-232: EIA/TIA-232-F
Line length	RS-485/-422: max. approx. 1000 m
	twisted pair, RS-232: max. 40 m
Buffer	2560 bytes in / 512 bytes out
Current consumption (internal)	85 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 46/1 x 24/1 x 6 bytes in/out
	(parametrizable), 2 bytes control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC immunity of interference	acc. to EN 61131-2, marine applications
EMC emission of interference	acc. to EN 61131-2, marine applications

TTY Interface - 20 mA Current Loop





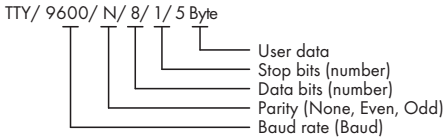
Delivered without miniature WSB markers

This interface allows the connection of devices which are equipped with a 20mA current interface.

The interface is working in active, semi-active or passive operation mode. The module communicates with the control unit over the fieldbus coupler.

The active communication channel works independently of the higher-level fieldbus system and allows full duplex operation up to 19200 baud.

The TTY interface guarantees high interference immunity because of the electrical isolation and the driven loop current.



Description	Item No.	Pack. Unit
TTY/ 9600/ N/ 8/ 1	**750-651**	1
TTY/ 9600/ N/ 8/ 1/ 5 bytes	**750-651/000-001**	1
TTY/ 9600/ E/ 8/ 1	**750-651/000-002**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

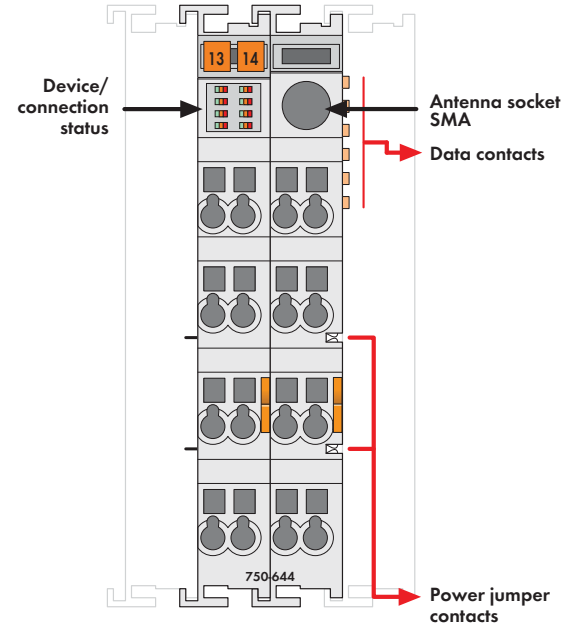
Approvals

Conformity marking	CE
Korea Certification	
Marine applications (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
DEKRA 11 ATEX 0203 X	II 3 G Ex nA II T4

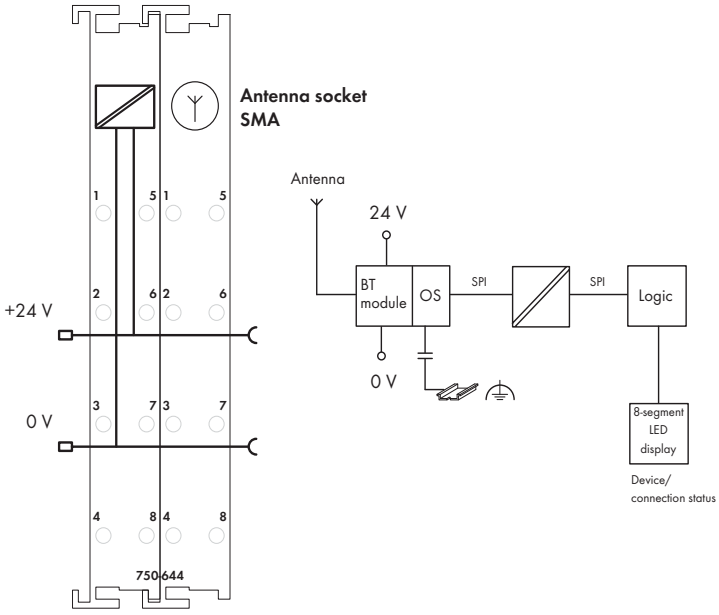
Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	9600 baud (factory preset)
	1200 ... 19200 baud
Bit transfer	2 x 20 mA
Load impedance	< 500 Ω
Line length	approx. 1000 m twisted pair
Buffer	128 bytes in/16 bytes out
Current consumption (internal)	55 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications

Bluetooth®/RF Transceiver



Delivered without miniature WSB markers



The 750-644 I/O Module permits the wireless exchange of process data with up to seven other devices via Bluetooth® 2.0 radio technology. Interoperability with Bluetooth® devices is made non-proprietary via PAN and SPP Bluetooth® profiles. A special profile for time-sensitive applications is also available.

Reliable connections over distances of up to 1000m are possible using the WAGO 758-912 external antenna.

The module's extended diagnostic functions include cyclic and acyclic state information. For quick on-site diagnostics, main information on operational status and radio connection is also displayed via 8 LEDs.

The I/O module can be operated with all standard fieldbus couplers/controllers from the WAGO-I/O-SYSTEM 750. Module configuration is performed locally via WAGO-I/O-CHECK.

Description		Item No.	Pack. Unit
Bluetooth®/RF Transceiver		**750-644**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	
External antenna	WLAN/Bluetooth 2.4 GHz	**758-912**	1

Approvals

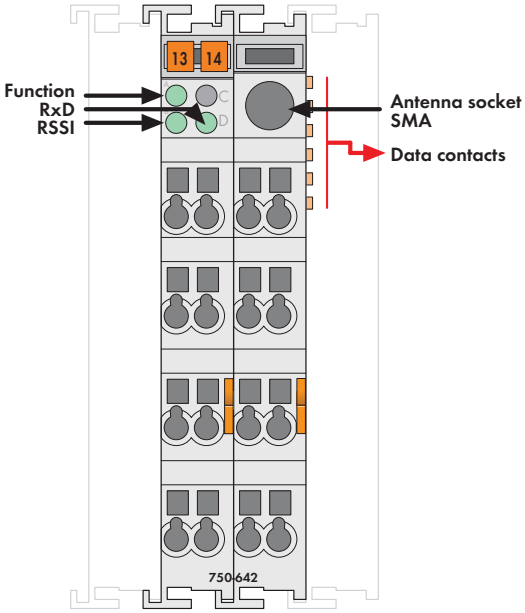
FC	FCC approval (This device complies with part 15 of FCC rules)
Bluetooth	Bluetooth® approval
Conformity marking	CE
Korea Certification	
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

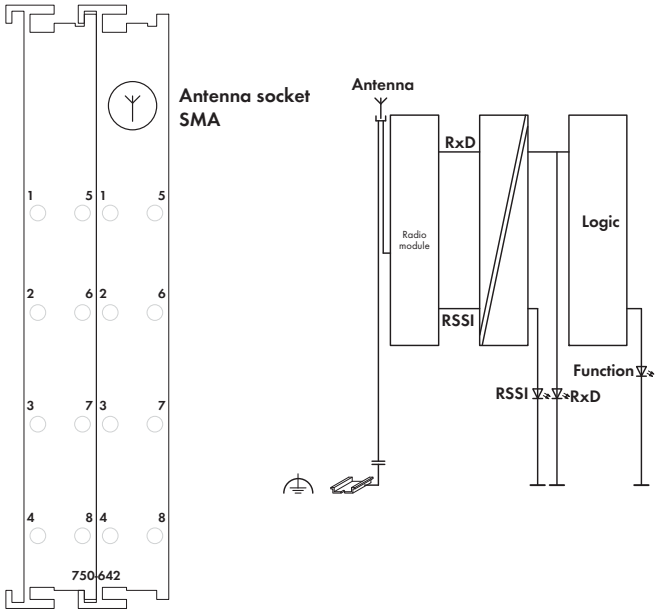
Technical Data

Wireless technology	Bluetooth® 2.0 + EDR
Topology	Piconet (1 master, max. 7 slaves)
Coexistence	AFH and adaptive transmission power
Profiles	SPP, PAN
Operating modes	Communication mode with ad-hoc profile
	for high connectivity and real-time profile
	for time-critical applications, as well as
	configuration mode
Frequency band	2402-2480 MHz (license-free ISM band)
Transmitter power	up to 20 dBm (Bluetooth® Class 1)
Receiver sensitivity	-94 dBm
Transmission range	max. 1000 m in open field, 100 m in
	buildings (using a WAGO external
	antenna, item no. 758-912)
Voltage supply (Bluetooth)	via 24 V DC field supply
Voltage supply (internal)	via system voltage DC/DC
Current consumption (Bluetooth)	approx. 8 mA, max. 35 mA
Current consumption (internal)	approx. 20 mA
Isolation	500 V antenna/system
Internal bit width	12, 24, 48 bytes configurable; i
	ncl. 1 byte control/status
Diagnostics (via visual indicator)	Device status, connection status [1]
Diagnostics (via process image)	Device status, connection status [1],
	time monitoring
Configuration	WAGO-I/O-CHECK and
	WAGO-I/O-PRO CAA
Dimensions (mm) W x H x L	24 x 64* x 100; *+ excess length of the
	SMA socket approx. 6.5 mm
Weight	85 g
EMC immunity of interference	acc. to EN 61000-6-2, EN 61131-2
EMC emission of interference	acc. to EN 61000-6-3, EN 61131-2

[1] Quality of radio connection, signal strength, interference

Radio Receiver Module



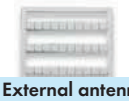


Delivered without miniature WSB markers

The 750-642 I/O Module receives radio telegrams from maintenance-free, battery-less and wireless switches and sensors based on EnOcean radio technology.
The module can be used with any controller of the WAGO-I/O-SYSTEM 750. Preprogrammed function blocks make integration easy.
The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy. The radiated energy from the transmitter modules is around one million times smaller than mobile phones. Almost any number of sensors is possible. However, the maximum number is around 100 transmitters per module, due to the increasing density of switches/sensors.

Four billion code numbers provide for clear transmitter/receiver assignment. Repeated, time-shifted transmission of the radio telegrams, at very short transmission times, results in a high level of protection against external interference. The maximum transmission range is approx. 300 meters in open field. Depending on the building materials used and on the spatial geometry, the range may be reduced to typically 30 meters (see manual for more information). The LED (RSSI) indicates a sufficient input level.
*Documentation available in German and English.
An SMA socket which is integrated into the housing allows the connection of an external antenna. The 758-910 external antenna has a magnetic stand and a 2.5m long coax cable with SMA plug (available as an accessory).

Description		Item No.	Pack. Unit
Radio Receiver Module		**750-642**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	
External antenna	GSM 900/1800	**758-910**	1

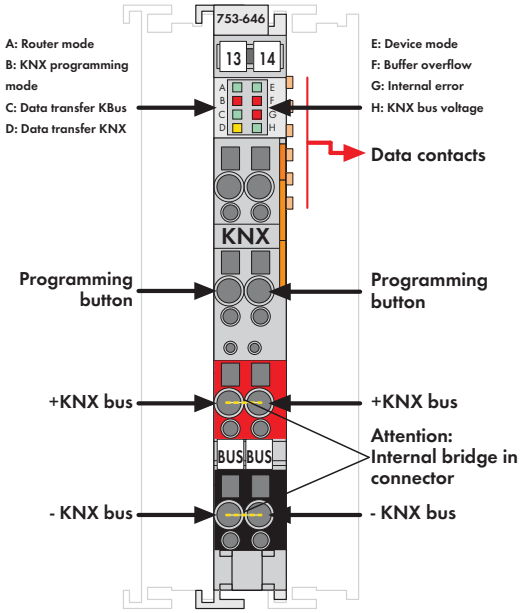
Approvals

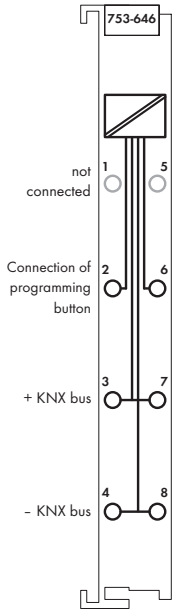
Conformity marking RTTE	www.wago.com
Conformity marking	CE
Korea Certification	
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

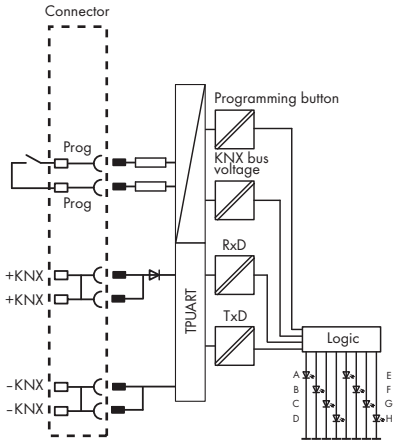
Technical Data

Frequency band	868.3 MHz
Transmission range	300 m in open field (typ. in buildings see manual)
Transmission protocol (radio telegram)	EnOcean
Current consumption (internal)	80 mA
Power supply	via system voltage DC/DC
Isolation	500 V antenna connection/system
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Dimensions (mm) W x H x L	24 x 64* x 100
	*+ excess length of the SMA socket
	approx. 6.5 mm
Weight	80 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

KNX/EIB/TP1 Module







Delivered without miniature WSB markers

The 753-646 KNX/EIB/TP1 I/O Module serves to connect a KNX/EIB/TP1 network. The module supports two different functions:

1. Device mode: With this module, all programmable controllers (*1) that are relevant for building automation can be connected to a KNX/TP1 network. In a KNX network, the module appears as a standard KNX device and is linked using the ETS Professional commissioning tool. The module supports a maximum of 253 communication objects with any DPTs, 254 group addresses and 254 associations. The application is programmed using WAGO-I/O-PRO CAA. An ETS plugin, which is included in the WAGO product database, is required so that the data from the application program can be allocated to the group addresses.

*1: See www.wago.com: Documentation; WAGO I/O System 753; Specialty Modules; KNX/EIB/TP1 Module; Device Mode

2. Router mode: When the 750-849 Series KNXnet/IP Controller is connected to the first 753-646 Series KNX/EIB/TP1 Module, the device can be operated as a KNXnet/IP router. The module is switched to router mode automatically. An application program is not required for operation in router mode. Additional modules that are connected to a KNXnet/IP controller are addressed in device mode by the application.

The 753 Series connector with internally bridged contacts (3/7 and 4/8) is part of the delivery.

Both an external KNX voltage supply and ETS Professional are required to operate the KNX/EIB/TP1 I/O module.

Description	Item No.	Pack. Unit
KNX/EIB/TP1 Module	**753-646**	1

Accessories		Item No.	Pack. Unit
WAGO ETS plug-in (included in WAGO ETS product database)		see Section 1	
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

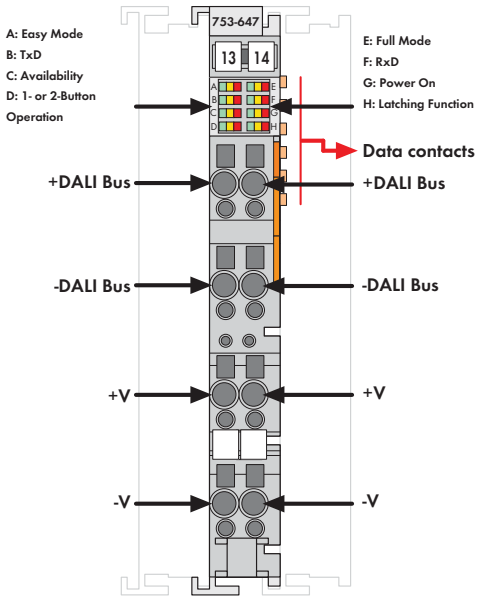
Approvals

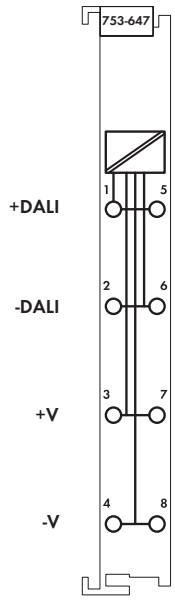
KNX certified	KNX
Conformity marking	CE
Korea Certification	
Marine applications	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	

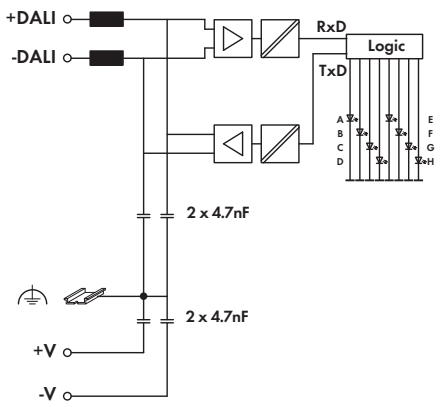
Technical Data

KNX/TP1 bus specification	1.0
Voltage supply (KNX)	via KNX power supply unit
Current consumption (KNX)	5 mA
Baud rate (KNX)	9.6 kbaud
Programming	using WAGO-I/O-PRO CAA (device mode)
Commissioning (KNX side)	with ETS plugin; programming button-bridge 2/6
Diagnostic information	via FbKNX_Master_646 function block (device mode)
Fault behavior	via FbKNX_Master_646 function block (device mode)
Voltage supply (internal)	via system voltage DC/DC
Current consumption (internal)	max. 25 mA
Isolation	2.5 kV rms
Internal bit width	24 bytes
Programming button	Bridge 2/6
Device mode:	
Number of communication objects	253
Number of group addresses	254
Number of associations	254
Supported DPTs	All (*acc. to KNX Specification 03_07_02 Data Point Types V 1.0)
Router mode:	
Can be used as -Line coupler	yes
- Area coupler	yes
- KNX interface	yes
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	52.5 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-3, marine applications

DALI Multi-Master Module







The 753-647 DALI Multi-Master Module complies with DALI standard according to IEC 62386. This manufacturer-independent protocol ensures interoperability of DALI devices in lighting applications.
The 1/2 inch (12 mm) wide module is a DALI interface used in combination with WAGO 750 Series Controllers and Modules (e.g., BACnet, KNX, EnOcean, LON, MODBUS).
Each DALI Multi-Master Module supports 64 addresses for electronic control gears (ECGs) and 64 addresses for DALI sensors. Each DALI ECG can be assigned to 16 groups and 16 scenes. The 753-647 Module also offers 16 additional virtual groups on the DALI bus.
Using the WAGO-I/O-SYSTEM, DALI control devices are seamlessly integrated with all supported BA and fieldbus protocols. Several DALI masters can be connected to a single fieldbus node. The maximum number of modules that can be connected to a controller depends on the memory required by the application. Fieldbus nodes are programmed via WAGO-I/O-PRO software. WAGO provides a comprehensive IEC-61131-3 library of function blocks, simplifying the creation of complex lighting applications.
Alternatively, an "Easy Mode" allows lighting functions to be easily controlled without any complicated PLC programming. The 753-647 Module is future-proof and upgradable to the latest DALI release. A comprehensive and easy-to-use commissioning and maintenance tool is available as stand-alone application or as integrated WAGO-I/O-CHECK software component.
The two following power supply options are available for the 753-647 Series:
1. The 753-620 DALI Multi-Master DC/DC Converter is used to supply one single module.
2. The 787-1007 Power Supply is used to supply several modules.

Description	Item No.	Pack. Unit
DALI Multi-Master Module	**753-647**	1

Accessories	Item No.	Pack. Unit
DALI Configurator	see Section 1 or download: www.wago.com	
WAGO-I/O-CHECK, RS-232 kit	**759-302**	1
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100

753 Series pluggable connector and coding accessories are part of the delivery.

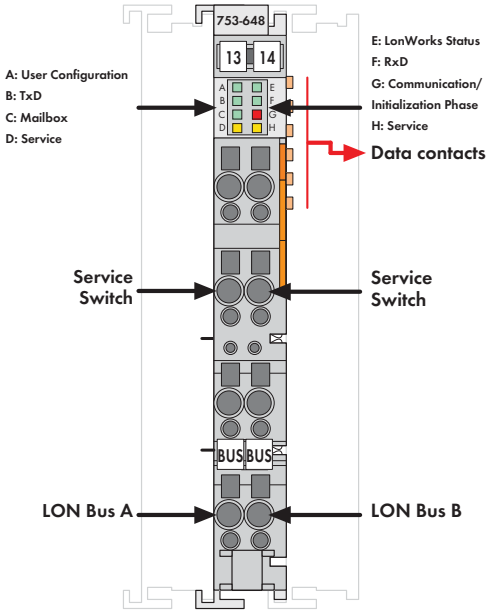
Approvals

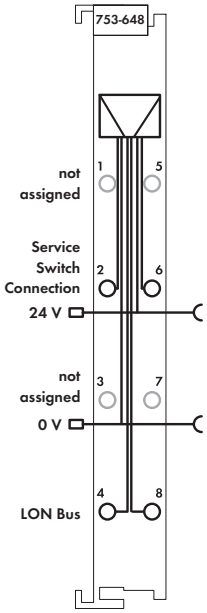
Conformity marking CE
UL 508

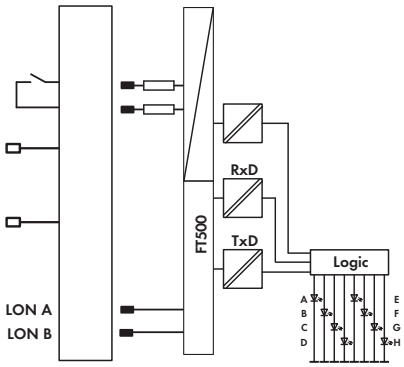
Technical Data

DALI specification	DIN IEC 62386 only in conjunction with 753-620 or 787-1007 Power Supplies
Number of slaves (DALI)	addressable: 64 control devices + 64 control gears
Module power supply at +V and -V	18 V via 753-620 / 787-1007 Power Supplies
Transmission channel	1
Technical information acc. to DALI specification	
Maximum supply current	250 mA
Guaranteed supply current	200 mA
Current consumption (internal)	30 mA
Power supply	via system voltage (DC/DC)
Isolation	1500 V DC DALI bus/Internal data bus
Internal bit width	24-byte data
Commissioning	via WAGO-I/O-CHECK
Configuration	with WAGO DALI Configurator
Programming	via WAGO-I/O-PRO
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	55 g
EMC immunity of interference	acc. to EN 61000-6-2*, marine applications
EMC emission of interference	acc. to EN 61000-6-3*, marine applications
	*Only in conjunction with 753-620 / 787-1007 DC/DC Converter

LON FTT Module







The 753-648 LON FTT Module complies with the ISO/IEC 14908 standard. The 1/2 inch (12 mm) wide I/O module connects LON to the 750 Series controller and modules (e.g., BACnet, KNX, EnOcean, DALI, MODBUS). It is a full-fledged and flexible LON device within LonWorks FT or LP networks. The module's network variable interface defines 249 network variables of any type and supports both LonMark objects and configuration properties.
LON network interface is defined via LON Configurator, a comprehensive and easy-to-use WAGO-I/O-PRO software tool. Interface representations are programmed via IEC-61131-3 and can be easily used for further applications. Fieldbus nodes are programmed via WAGO-I/O-PRO software. WAGO provides a comprehensive IEC-61131-3 library of function blocks, simplifying the creation of complex control applications.

A maximum of two modules may be connected to one controller. However, the number of modules depends on the memory required by the IEC application and the type of controller. The module is supplied via 24V power jumper contacts.

Description	Item No.	Pack. Unit
LON FTT Module	**753-648**	1

Accessories		Item No.	Pack. Unit
LON-LIB		Download: www.wago.com	
LON Configurator		see Section 1	
WAGO-I/O-PRO V2.3, RS-232 kit		**759-333**	1
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	
753 Series Connectors		**753-110**	25
Coding elements		**753-150**	100

753 Series pluggable connector and coding accessories are part of the delivery.

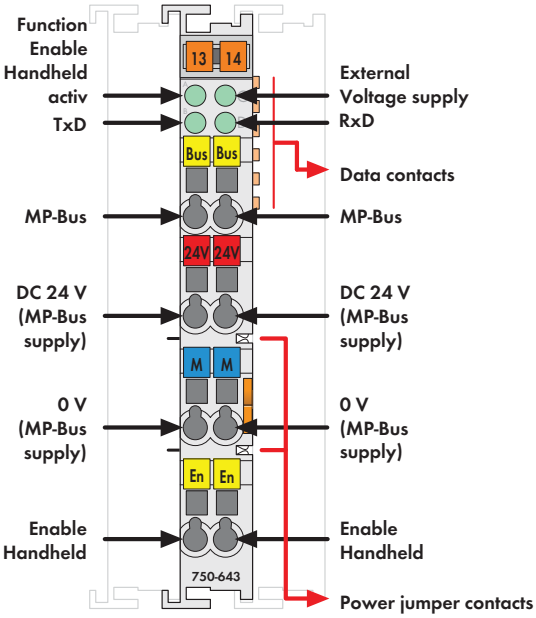
Approvals

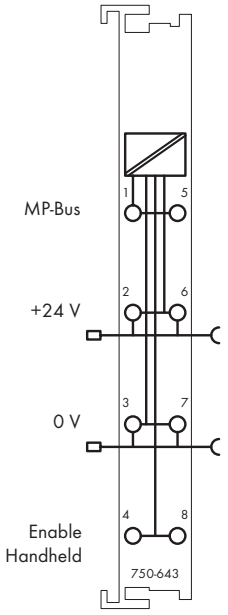
Conformity marking	CE
UL 508	

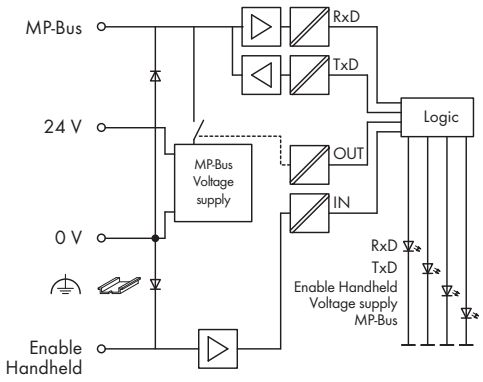
Technical Data

Transmission medium	Twisted Pair - FTT
Max. length of fieldbus segment	500 m (free topology); 2700 m (bus topology)
Topology	acc. to LON specification
Baud rate	78 kbps
Commissioning	via WAGO-I/O-CHECK
Programming	via WAGO-I/O-PRO
Interface to LON network	programmable via WAGO-I/O-PRO
Number of network variables	max. 254 (249 for application)
Number of aliases	max. 127
ISI (Interoparable Self-Installation)	no
DMF (Direct Memory Files)	no
Processor	FT5000
Transceiver	FTX2
Transmission channel	1
Current consumption (internal)	30 mA
Power supply	via system power
Isolation	500 V system/supply
Internal bit width	24-byte data
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	55 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

MP-Bus Master Module







Delivered without miniature WSB markers

The 750-643 I/O Module acts as a master for the MP-Bus (Multi Point Bus of the Swiss company Belimo) and allows the bus to be integrated into a higher level bus network such as ETHERNET or LonWorks. The MP-Bus serves to control HVAC actuators like dampers, regulator valves or VAV air volume control. Another product series with MP-Bus connection is FLS (window ventilation system) from Belimo.Devices that are equipped with an MP-Bus connection, e.g. the Belimo MFT actuator series, can communicate with a higher level control via bus cable.

The actuators have connections for active and passive sensors (temperature, humidity, ON/OFF switch) and hence can also be accessed via MP-Bus. An MP Bus Master, i.e. the WAGO I/O module, can manage up to 8 slaves (actuators) + 8 sensors (1 sensor per slave) via a common bus cable which reduces the wiring of sensors and actuators considerably (cable lengths of MP-Bus cables see Belimo documentation). In order to parameterize the Belimo actuators, the I/O module can be connected to a Belimo parameterization tool (handheld control unit or Belimo PC tool). For this purpose use the "Enable Handheld" contact. If an external parameterization tool (or 24V) is connected, the module switches off the MP-Bus supply.

Description	Item No.	Pack. Unit
MP Bus Master module	**750-643**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

Approvals

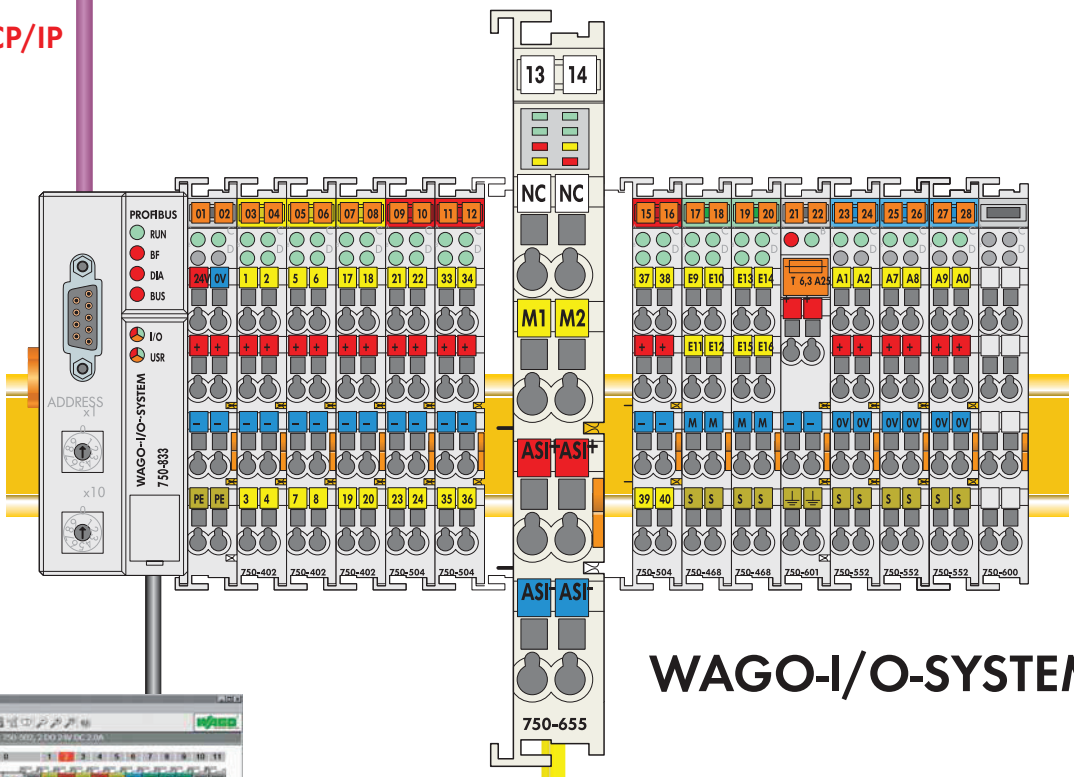
Conformity marking	CE
Korea Certification	KC
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

Technical Data

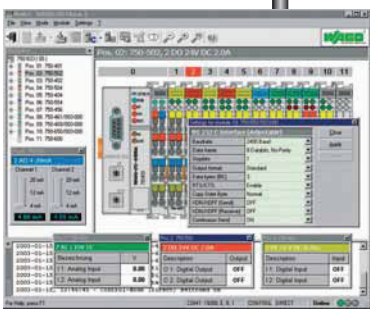
MP Bus specifications	PP/MP specifications V1.21 from Belimo (Valid since 1.10.2002)
No. of slaves	max. 8
Voltage supply (MP-Bus)	24 VDC
Current consumption (MP-Bus)	25 mA without motor current (for MP-Bus) if the motors are supplied via the MP-Bus module, all motor currents must be added
Current consumption (internal)	15 mA
Power supply	via system voltage DC/DC
Isolation	500 V eff MP-bus/system
Internal bit width	1 byte C/S, 7 byte data
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51.4 g
EMC immunity of interference	acc. to EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3

PROFIBUS
ETHERNET TCP/IP
DeviceNet
CANopen

PROFIBUS DP



WAGO-I/O-SYSTEM



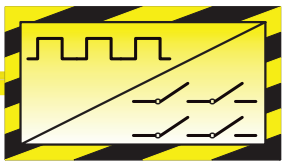
Configuration via WAGO-I/O-CHECK for example

ASI INTERFACE

IP20

DI DO

Slaves Digital Input/ Digital Output



Safety at Work Monitor

IP67

AI AO

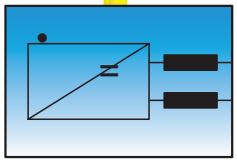
Slaves Analog Input/ Analog Output

M

Motor Connections

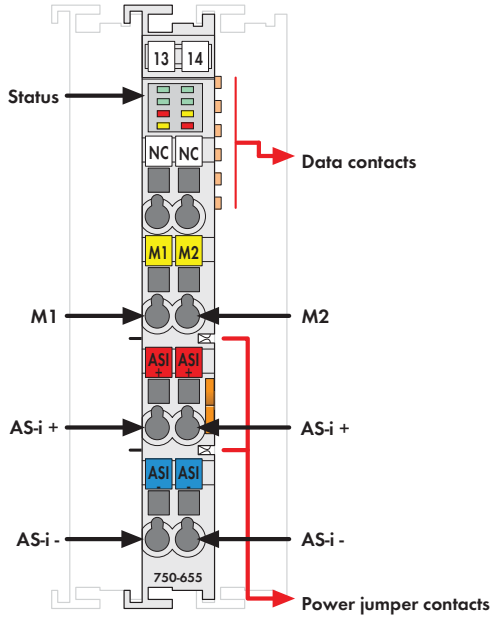
DI DI

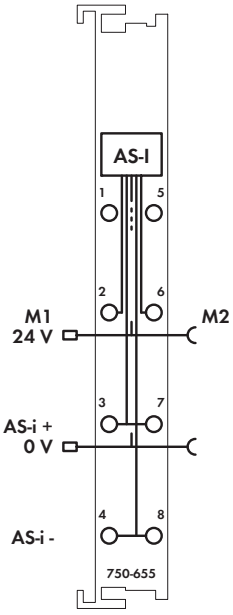
Safety at Work Slave

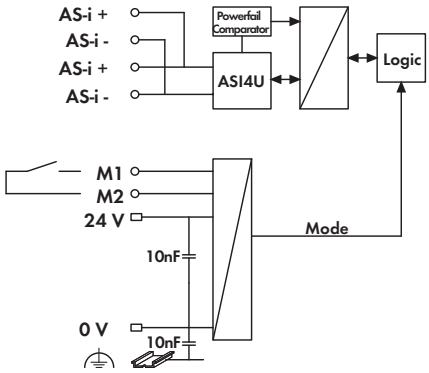


AS-Interface Power Supply Unit

WAGO AS-Interface Master







Delivered without miniature WSB markers

The 75x-655 AS-I Master Module connects AS-Interface systems to a higher-level fieldbus.
The module acts as a master for the AS-Interface and as a slave for the fieldbus.
The 75x-655 AS-I Master Module is an M4 master per AS-Interface V3.0 Specification. This means:

- Up to 62 AS-Interface slaves can be connected per AS-I line
- Analog signal transfer is integrated in the masters
- Slave profile support complies with V3.0
- Combined 1-5 transaction types and acyclic write/read services are implemented.

The AS-I functions are provided both cyclically and acyclically via the fieldbus.
In cyclic data transfer, up to 32 bytes of I/O data are transferred for the AS-I line binary data. Free cyclic process image areas can be mapped with analog values. Furthermore, analog signals and all other commands and data of the new AS-I specification can be transferred in a management channel via the fieldbus.
Diagnostics, which go far beyond the AS-I specifications, simplify the detection of both sporadic configuration errors and AS-I communication interferences.
An auto-installation mode allows an AS-Interface network to be created via sequential slave installation, with no addressing tool required.
Both signal transmission and operating status, as well as trouble-free internal data bus communication are indicated via LEDs.

Description	Item No.	Pack. Unit
AS-Interface Master M4 V3.0	**750-655**	1
AS-Interface Master M4 V3.0 (without connector)	**753-655**	1

Accessories

753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see Section 11	

Approvals

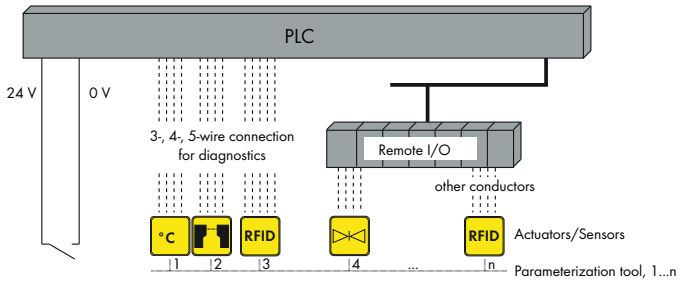
AS-Interface certificate	ZU 50601
Conformity marking	CE
Korea Certification	
Marine applications	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I M2 Ex d I Mb,
	II 3 G Ex nA IIC T4 Gc,
	II 3 D Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C
IECEx TUN 09.0001 X	Ex d I Mb,
	Ex nA IIC T4 Gc,
	Ex tc IIIC T135°C Dc
Permissible ambient temperature	0 °C ... +60 °C

Technical Data

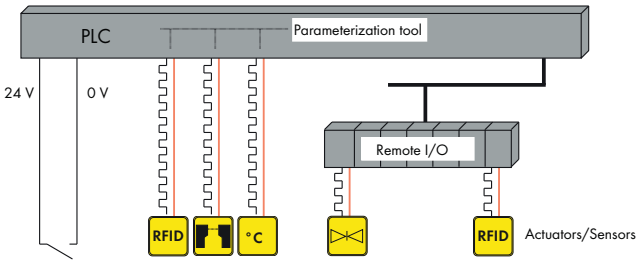
AS-I specification	3.0
No. of slaves	up to 62
Current consumption (AS-I)	40 mA
Voltage supply (AS-I)	26.5 V ... 31.6 V
Max. length of AS-I cable	100 m (300 m through repeater)
Cycle time AS-I	0.3 ms ... 10 ms, depending on the number of slaves
Configuration	via process image, WAGO-I/O-CHECK
Transmission channel	1
Max. current consumption (internal)	55 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply/AS-I
Bit width	max. 12 ... 48 bytes, configurable including 1 byte control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	56 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications

4-Channel IO-Link Master

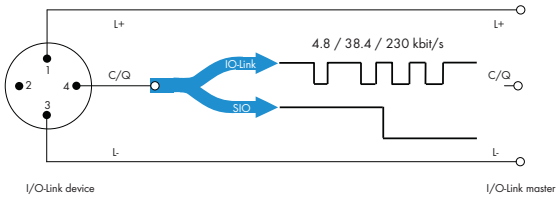
Automation right up to the last meter ...
Increasingly complex products, manufacturing flexibility and high demands on quality assurance require intelligent, configurable and programmable sensors. IO-Link streamlines required, varying interfaces for connecting to a control system and tooling to fulfill these demands.
A 3-wire connection can communicate process data (as single bits, bytes and data blocks for input and output data). It also communicates acyclic data (for identification, configuration, parameterization and diagnostics) with up to 230.4 kbaud to both sensors and actuators..
The functions and performance data are defined in device description files for master and device; these are easy to customize via WAGO-I/O-CHECK.
If a device must be replaced, the configuration and parameterization can be automatically restored without maintenance personnel.
Project design, installation and operation are simplified!



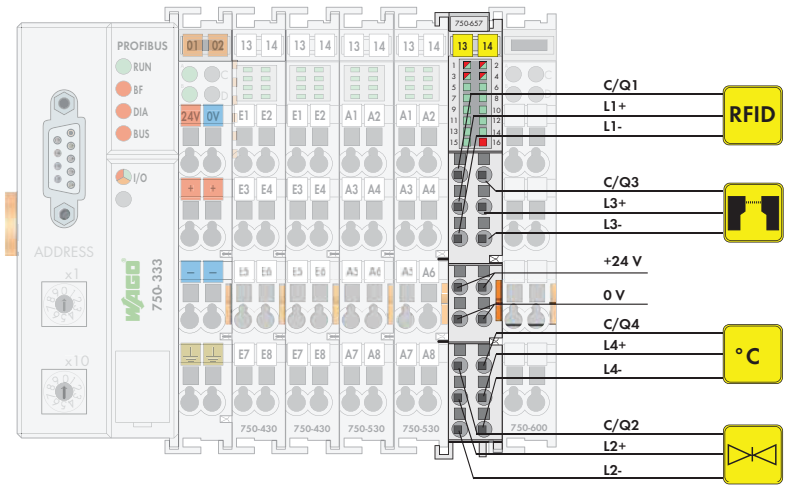
Complex sensors often require different interfaces for binary or analog process value transmission, as well as for configuration and parameter setting. This requires different proprietary configuration tools.



IO-Link simplifies use sensor and actuator functionalities via:
- standardized IO Device Description (IODD) files,
- device profiles,
- communication.
Combined with customized tooling, this makes different cable types and time-consuming control system integration.

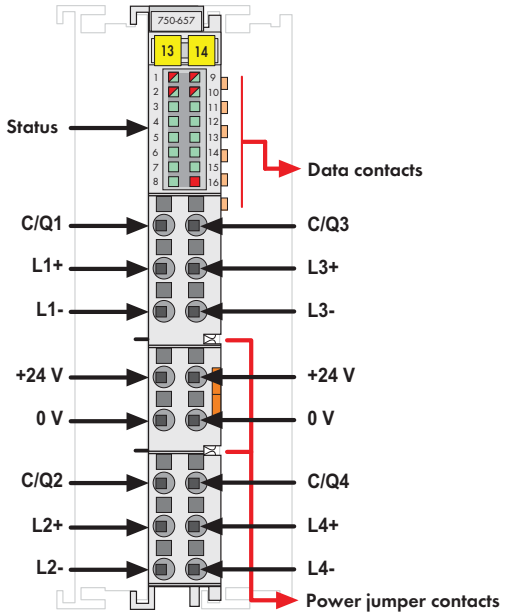


IO-Link features:
1. Cyclic process data:
   1-bit to maximum 32-byte input and output data
2. Point-to-point connection
3. Acyclic data:
   Addressing via index (0...32k) and subindex (0...255)
4. Events (errors, warnings and messages; 2-byte code)

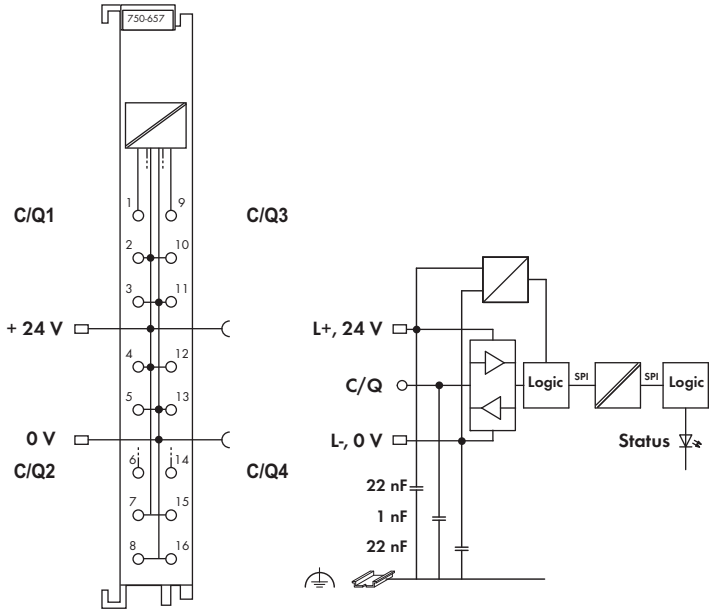


Four different IO-Link devices, or even digital standard sensors/actuators, can connect to the WAGO 750-657 IO-Link Master simultaneously. The module has 3 connections for each of the 4 channels although it is just 12mm (0.47in) wide. This provides cost-effective and convenient connection of sensors and actuators, by eliminating extensive wiring and time-consuming integration.

4-Channel IO-Link Master



Delivered without miniature WSB markers



Increasingly complex products, manufacturing flexibility and high demands on quality assurance require intelligent, configurable and programmable sensors. To fulfill these demands, IO-Link streamlines the varying interfaces required to connect to a control system and tooling.
A 3-wire connection can communicate process data (as single bits, bytes and data blocks for input and output data). It also communicates acyclic data (for identification, configuration, parameterization and diagnostics) with up to 230.4 kbaud to both sensors and actuators.
The functions and performance data are defined in device description files for master and devices; these are easy to customize via WAGO-I/O-CHECK.
If a device must be replaced, the configuration and parameterization can be automatically restored without maintenance personnel.

Project design, installation and operation are simplified!
Four different IO-Link devices or standard digital sensors/actuators can simultaneously connect to the WAGO 750-657 IO-Link Master.
At just 12mm wide, the module has 3 connections for each of the 4 channels.

Description	Item No.	Pack. Unit
4-Channel IO-Link Master	**750-657**	1

Accessories		Item No.	Pack. Unit
WAGO-I/O-CHECK, RS-232 kit		**759-302**	1
GSD files		Download: www.wago.com	
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

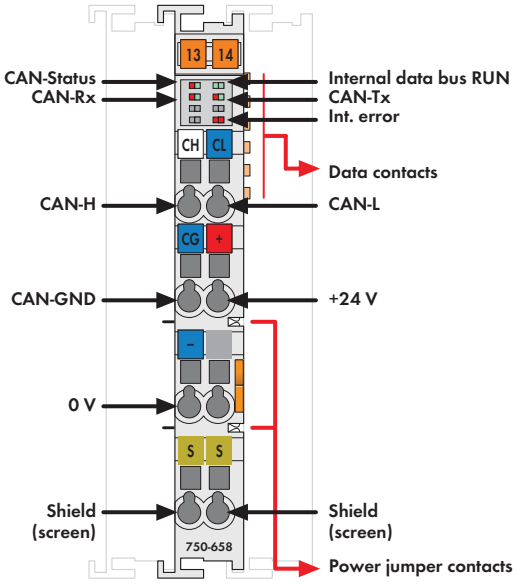
Approvals

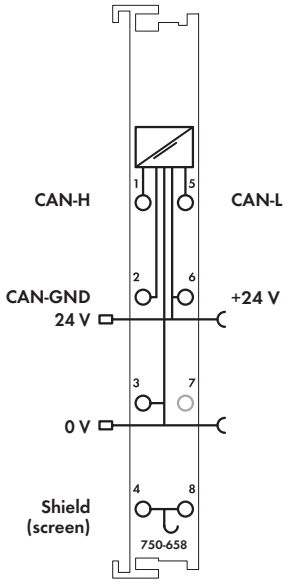
Conformity marking	CE
Korea Certification	
UL 508	

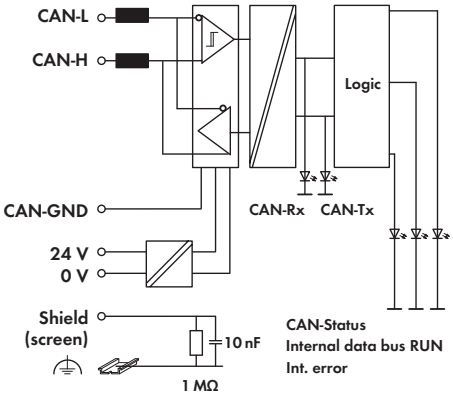
Technical Data

Number of IO-Link ports	4
Power supply	5 V system voltage via internal data bus,
	24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC (20.4 V ... 28.8 V;
	-15% ... +20%)
Current consumption typ. (24 V)	50 mA
Current consumption typ. (KBUS)	40 mA
Connection type	Physics 2 (3-wire)
Transmission modes	4.8 kbaud (COM 1),
	38.4 kbaud (COM 2),
	230.4 kbaud (COM 3)
Line length (max.)	20 m
Internal bit width	4-24 bytes, configurable
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.25 mm² ... 1.5 mm² / AWG 22 ... 14
	fine-stranded:
	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50.5 g
EMC immunity of interference	acc. to EN 61000-6-1, EN 61000-6-2
EMC emission of interference	acc. to EN 61000-6-3, EN 61000-6-4

CAN Gateway







The CAN Gateway supports CAN Layer 2, while meeting CAN specifications 2.0A (11-bit identifier) and 2.0B (29-bit identifier). Function blocks allow the gateway to read and write higher-protocol telegrams (e.g., CANopen).

The gateway adjusts itself to baud rates between 10 kbit/s to 1 Mbit/s via automatic bit-rate detection (Auto Baud Rate). It is also possible to set a fixed transmission rate. Six configurable filters for input telegrams allow CAN messages to be filtered via the CAN identifiers.

Three operation modes are available: Sniffer mode provides a detailed CAN bus analysis without interactions. In transparent mode, the gateway works as an active CAN device that can send and receive any type of CAN telegrams. Mapped mode enables CAN telegrams to be generated directly from the process image. It also allows select process values to be copied from received telegrams into the input process image. A CAN telegram may be sent cyclically, manually or event-triggered (change of process value).

Description	Item No.	Pack. Unit
CAN Gateway	**750-658**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

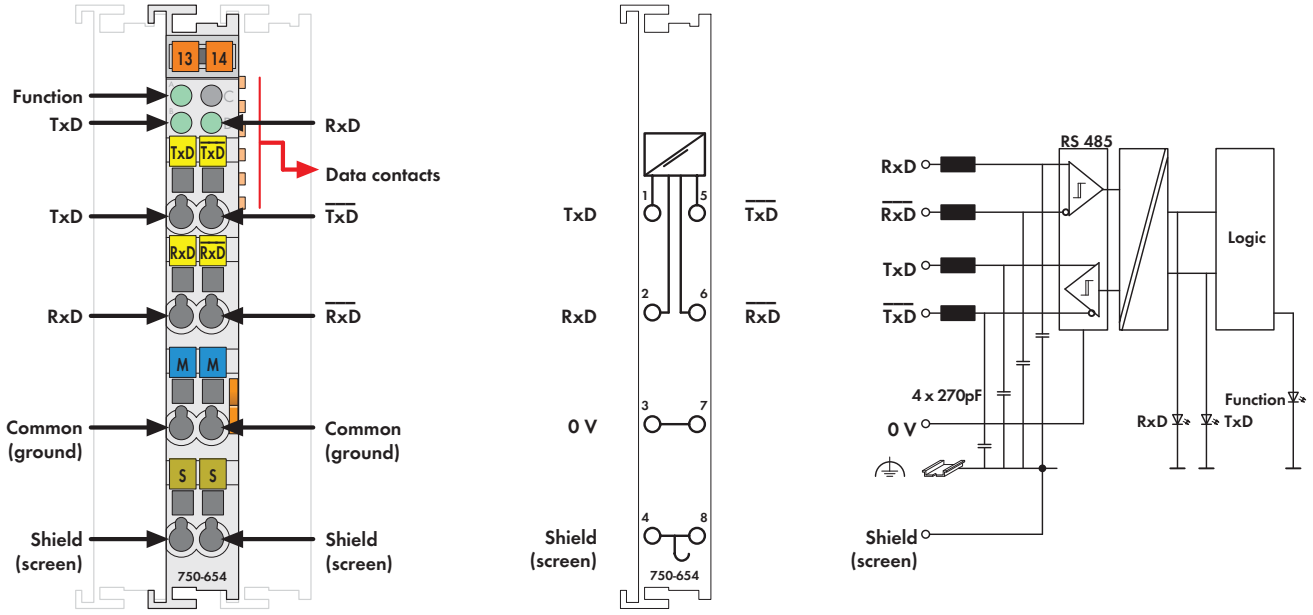
Approvals

Conformity marking	CE
Marine applications	GL
UL 508	

Technical Data

Number of inputs	1 (CAN interface)
Supported baud rates	10 kbit/s, 20 kbit/s, 50 kbit/s, 125 kbit/s, 250 kbit/s, 500 kbit/s, 800 kbit/s, 1 Mbit/s, Auto Baud Rate
CAN data formats	acc. to 2.0A (Standard: 11-bit ID), acc. to 2.0B (Extended: 29-bit ID)
Operation modes	Sniffer mode, transparent mode, mapped mode
Internal bit width	8, 12, 16, 20, 24, 32, 40, 48 bytes configurable; incl. control/status byte
Isolation (peak value)	V_M = 500 V system/supply
Current consumption typ. (24 V)	12 mA
Current consumption typ. (KBUS)	50 mA
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	88.7 g
EMC immunity of interference	acc. to EN 61000-6-2, EN 61131-2, marine applications
EMC emission of interference	acc. to EN 61000-6-3, EN 61131-2, marine applications

Data Exchange Module



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The data exchange module allows the exchange of data between different fieldbus systems.

Two modules are a communication pair that is connected by means of two twisted wire pairs. Each module is part of a fieldbus node.

The data exchange is done in full duplex operation, independent of the fieldbus system used. The data of the output process image of the fieldbus coupler is transmitted to the communication partner. This module then transmits the data to the input process image of its fieldbus coupler and vice versa.

Factory preset transmission is 32 bits of input data and 32 bits of output data. Data transfer time for 32 bits of I/O is about 5ms.

The LED "function" indicates a data exchange with the buscoupler. The status of the data transmission is indicated by the TxD and RxD LEDs.

Description	Item No.	Pack. Unit
Data Exchange Module	**750-654**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see Section 11	

Approvals

Conformity marking	CE
Korea Certification	KC
Marine applications	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
cULus UL 508	
DEKRA 11 ATEX 0203 X	II 3 G Ex nA II T4

Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	62500 baud (8 N 1)
Bit transfer	via 2 twisted pair with differential signals
Line impedance	120 Ω
Line length	approx. 1000 m twisted pair
Current consumption (internal)	65 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 32 bits in/out
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	49.1 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-4, marine applications