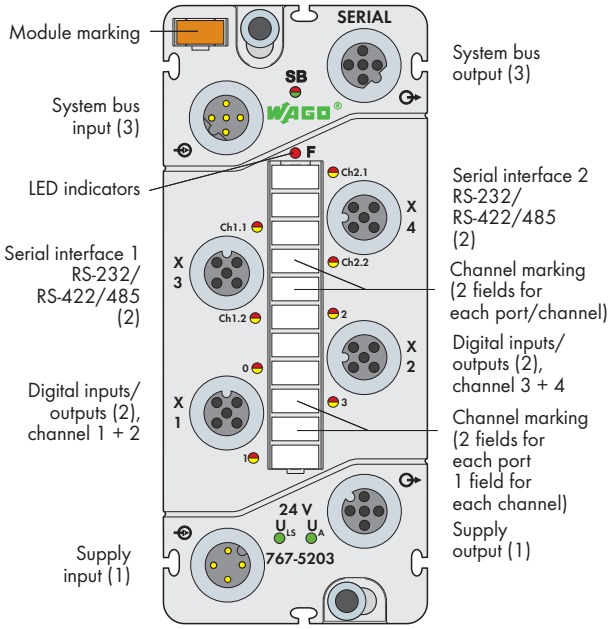
Serial Interface (RS-232, RS-422/-485)

2 interfaces (2xM12) + 4 digital inputs/outputs (2xM12, two inputs/outputs per connector)



Short description:
The serial interface module controls/monitors devices (e.g., barcode readers, printers, scales, laser measurement systems, operator panels, transponders) and offers in addition digital inputs/outputs.

Characteristics:
- 2 serial interfaces (RS-232, RS-422/-485)
- 4 digital inputs/outputs, 24 VDC / 0.5 A
- Diagnostic capable (per channel/per module)
- Parametrizable (serial interface, operating mode, filter, inversion, substitute value strategy, manual mode, online simulation and diagnostics)

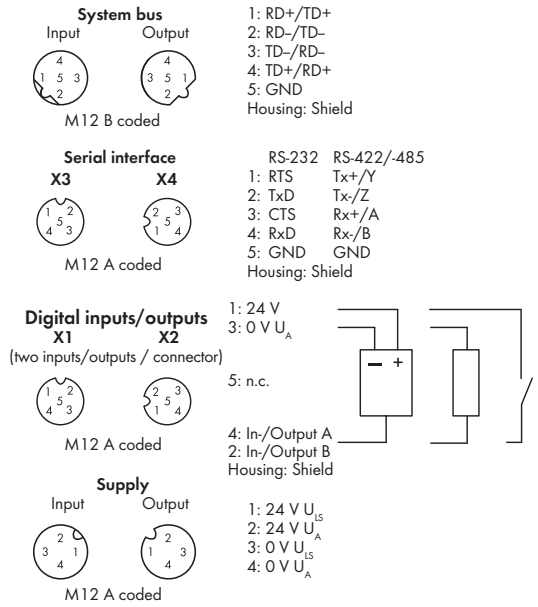
Included:
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

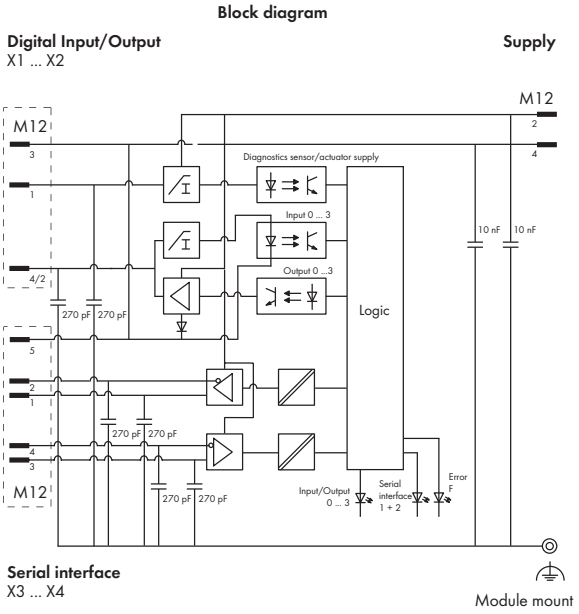
Description	Item No.	Pack. Unit
Serial Interface (RS-232, RS-422/-485)	**767-5203**	1
Product discontinuation	**Last Call: 30.09.2018**	

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 520 ... 521
IP67 cables and connectors	see pages 502 ... 517 + Section 11
RS-422/-485 Termination M12	**756-9218/050-000**

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles;
	Derating must be observed
Current carrying capacity of supply	
connections	max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ...+30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 75 mA + sensors (max. 400 mA)
Actuator current I_A	typ. 25 mA + actuators 2.4 A (4 x 600 mA)
Protection	Reverse voltage protection for U_{LS} + U_A
	Short-circuit protection for sensor/actuator supply
Serial interface:	
Interfaces	2
Connection type (2)	M12 connectors, A-coded, 5 poles, shielded
Transmission channels	1 RxD / 1 TxD (full/half duplex)
Type of cable, cable length	15 m (RS-232); 1000 m (RS-422/-485)
Baud rate	300 – 115,200 baud
Buffer	4 KB (In); 4 KB (Out)

Technical Data	
Digital inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A-coded, 5 poles, shielded
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 110 µs
	Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... U_A DC
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC);
	Power from U_A is strongly recommended,
	recovery for voltages > U_A
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
Input characteristic:	
Input voltage	Typical input current
-3 V < U_{IN} < 0 V	0 mA
5 V	2.3 mA ... 2.5 mA
11 V	6.4 mA ... 6.7 mA
24 V < U_A < 31.2 V	7.3 mA ... 7.5 mA
Digital outputs:	
No. of outputs	4
Connection type (2)	M12 connectors, A-coded, 5 poles, shielded
Wire connection	2- or 3-wire
No. of outputs	4
Connection type (2)	M12 connectors, A-coded, 5 poles, shielded





Technical Data

Digital outputs:	
Wire connection	2- or 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A),
	short-circuit/overload proof
	(thermal disconnection)
Voltage drop against U_A at 500 mA	max. 0.2 V DC
Output current (module)	max. 2 A
Leakage current in OFF state	typ. 5 µA
Output circuit	High-side switching
Information on actuator selection:	
Delay time hardware from "0" to "1"	
(0 – 90%)	typ. 90 µs (resistive load)
Delay time hardware from "1" to "0"	
(0 – 90%)	typ. 310 µs (resistive load)
Rise time from "0" to "1"	typ. 60 µs (resistive load)
Fall time from "1" to "0"	typ. 45 µs (resistive load)
Reverse current (in case of recovery for	
voltages > U_A)	≤ 1 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Fieldbus disruption	Acc. to substitute value strategy
S-bus (system bus) disruption	0 V status
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
Conformity marking	CE
Korea Certification	

Technical Data

Standards and approvals:	
cULus UL 508	
BVS 15 ATEX E 098 X	II 3G Ex nA IIC T5 Gc,
	II 3D Ex tc IIIB T90°C Dc
IECEx BVS 15.0083X	Ex nA IIC T5 Gc,
	Ex tc IIIB T90°C Dc
Isolation:	
Channel – Channel	no
U_{LS}, U_A, system bus	500 V DC each
Parameterizable functions, serial interface:	
Operating mode (per channel)	RS-232; RS-422/-485
Baud rate (per channel)	300 – 115,700 baud
Data bits (per channel)	7/8
Parity	None/Even/Odd
Stop bits	1/2
Flow-Control	None/Xon+Xoff/RTS+CTS
Parameterizable functions, digital inputs/outputs	
Operating mode, input filter, inversion,	
substitute value strategy, manual mode,	
online simulation and diagnostics	For details, see manual.
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Sensor/Actuator supply short-circuit/
	overload
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	Interface: 10 bytes (data in/out + status);
	DIO: 1-byte data in/out + 1-byte status
LED indicators:	
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 – 3: Signal status, inputs/outputs	LED (yellow/red)
Ch1.1 + Ch2.1: Transmission status	LED (yellow/red)
Ch1.2 + Ch2.2: Reception status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260 g