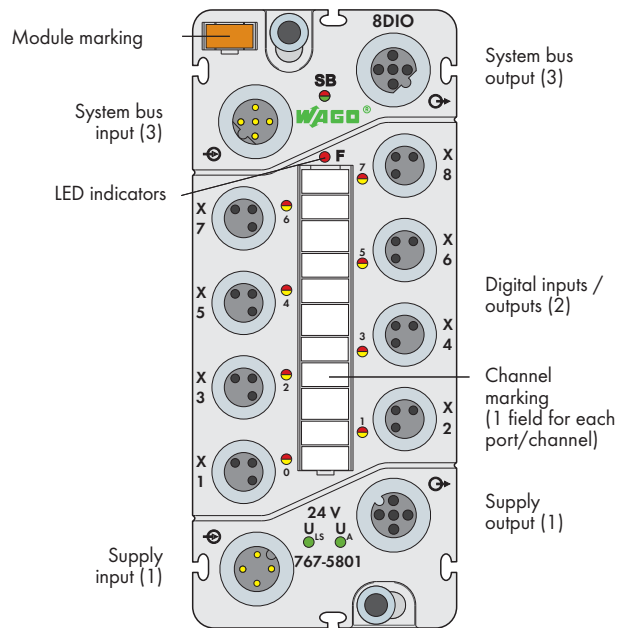


Digital Input/Output Module 24 V DC / 0.5 A

8 inputs/outputs (8 x M8)

**Short description:**

This digital input/output module records binary signals from switches, sensors and proximity switches (BEROs)*. The module also controls actuators, such as magnetic valves, DC contactors and indicators.

* Does not apply to 767-5801/000-800

Features:

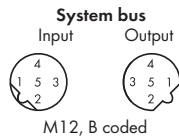
- 8 digital inputs/outputs, 24 VDC / 0.5 A
- Input/output, parametrizable (channel by channel)
- Diagnostic-capable (channel by channel/module by module)
- Parametrizable (operating mode, incl. counter, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:

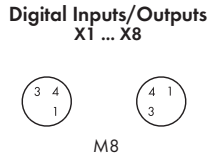
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M8 protective cap

Description	Item No.	Pack. Unit
8DIO 24V DC 0.5A (8xM8)	767-5801	1
Product discontinuation	Last Call: 30.09.2018	
8DIO 24V DC 0.5A IF (8xM8)**	767-5801/000-800	1
Product discontinuation	Last Call: 30.09.2018	
** Interference-free for safety function applications (see manual)		
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	
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_{IS} : 4 A, U_A : 4 A)	
Supply voltage		
Logic and sensor voltage U_{IS}	24 V DC (-25 % ... +30 %)	
Actuator voltage U_A	24 V DC (-25 % ... +30 %)	
Supply current		
Logic and sensor current I_{IS}	typ. 45 mA (only logic part)	
Actuator current I_A	typ. 75 mA + sensors/actuators (max. 800 mA) + load	
Protection	Reverse voltage protection for U_{IS} + U_A Short-circuit protection for sensor/actuator supply	
Digital inputs:		
Number of inputs	8	
Connection type (2)	M8 connectors, 3 poles	
Wire connection	2- or 3-wire	

Technical Data		
Digital inputs:		
Input filter	Hardware: $\leq 110 \mu s$ Software: parametrizable	
Input characteristic	Type 2, acc. to IEC 61131-2 (767-5801) Type 1, acc. to IEC 61131-2 (767-5801/000-800)	
Signal voltage (0)	-3 V ... +5 V DC	
Signal voltage (1)	+11 ... +30 V DC (767-5801) +15 V ... +30 V DC (767-5801/000-800)	
Input wiring	High-side switching	
Input voltage	24 VDC ($-3 \text{ VDC} < U_{IN} < +30 \text{ VDC}$); Power from U_A is strongly recommended, recovery for voltages $> U_A$	
Input current (typ.)	7.0 mA (767-5801) 3.0 mA (767-5801/000-800)	
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current	
Cable length, unshielded	$\leq 30 \text{ m}$	
Input characteristic:		
Input voltage	Typical input current	
0 V DC	0	
5 V	2.7 mA (767-5801) 0.6 mA (767-5801/000-800)	
11 V	6.8 mA (767-5801)	
15 V	2.6 mA (767-5801/000-800)	
24 V	7.0 mA (767-5801)	
	3.0 mA (767-5801/000-800)	
30 V	7.1 mA (767-5801) 3.2 mA (767-5801/000-800)	
Digital outputs:		
No. of outputs	8	
Connection type (2)	M8 connectors, 3 poles	
Wire connection	2- or 3-wire	

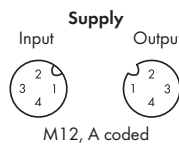
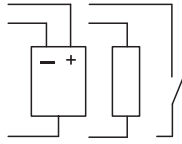


- 1: RD+/TD+
 - 2: RD-/TD-
 - 3: TD-/RD-
 - 4: TD+/RD+
 - 5: GND
- Housing: Shield



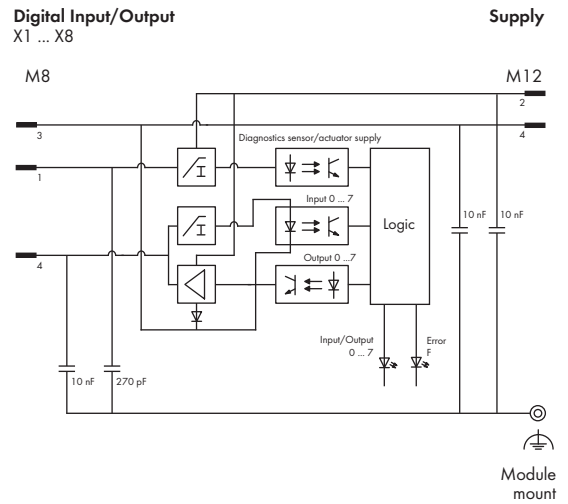
- 1: 24 V
- 3: 0 V U_A

4: In-/Output



- 1: 24 V U_{IS}
- 2: 24 V U_A
- 3: 0 V U_{IS}
- 4: 0 V U_A

Block diagram of an input/output



Technical Data

Digital outputs:

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. 4 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)
Cable length, unshielded	≤ 30 m
Reverse current (in case of recovery for voltages > U _A)	≤ 0,5 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

Counters:

No. of counters	2
Counter type	Event/Gate time counter, pulse duration
Counting/switching frequency	0 Hz ... 1 kHz

Technical Data

System bus:

Connection type (3)	M12 connectors, B coded, 5 poles, shielded
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Standards and approvals:

Conformity marking	CE
Korea Certification	
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 _{IS} , U _A , system bus	500 V DC each

Configurable functions:

Operating mode (per module)	DO-Module/DI-Module/DIO-Module/ DIO + 1 counter/DIO + 2 counters
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics

I/O diagnostics:

I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Sensor/Actuator supply short-circuit/ overload; Undervoltage (U _{IS} + U _A)

Process image:

Process data width	Depends on operating mode
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LED indicators:

SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input and output signal status	LED (yellow)
0 ... 7: Output diagnostics	LED (red)
U _{IS} + 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