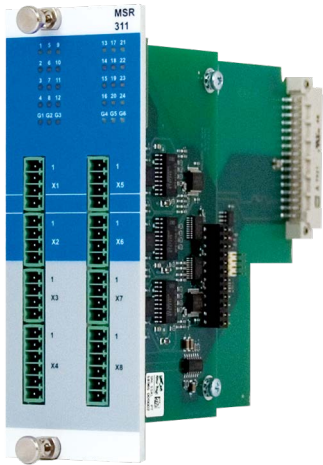


# I/O Modules

## MSR 311



This module has 24 short-circuit proof +24 V/2 A (positive switching) digital outputs, which are back-readable and therefore can also be used as inputs with a +24 V level for reading the signal conditions 0 and 1.

The power supply for each channel group is monitored for over voltage.

### Digital Outputs

Number of outputs	24 (back-readable)
Short-circuit proof	yes
Maximum continuous current load allowed per channel	2 A
Maximum total current 4 outputs	6 A (100 % of on time)
Maximum total current (complete module)	36 A (100 % of on time)
Voltage drop over power supply (output active)	≤ 1 V
Residual current (output inactive)	≤ 12 mA
Turn-on delay	typically 100 μs
Turn-off delay	typically 100 μs
Status display	LEDs: outputs yellow, voltage monitor red

### Status of the Back-Readable Outputs

Number	24	
Input voltage	typically +24 V	maximum +30 V
Signal level	low: < +4.5 V	high: > +12 V
Switching threshold	typically +8 V	
Input current	typically 5 mA at +24 V	
Input delay	typically 5 ms	

### Electrical Requirements

Supply voltage for Outputs +24 V /1-6	18-30 V DC	
Current consumption of supply voltage for the outputs +24 V /1-6	corresponds to the load on the digital outputs (maximum of 6 A per group of 4)	

### Voltage Monitor

Supply voltage +24 V /1-6	power supply < 18 V (error LED lights red)
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### Article Number and Miscellaneous

Article number	18-001-311
Hardware version	1.x

### Environmental Conditions

Storage temperature	-30 ... +85 °C	
Operating temperature	0 ... +60 °C	
Humidity	0-95 %, non-condensing	
EMC stability	in accordance with EN 61000-6-2:2001 (industrial area)	
Shock resistance	EN 60068-2-27	150 m/s <sup>2</sup>
Protection type	EN 60529	IP20