

DS NET Hardware

DS NET DIO8 DIGITAL IN/OUT EXPANSION MODULE

Black line

19 inch



MAIN FEATURES

- **8 digital inputs and digital outputs**
configurable as counter, frequency, PWM and time inputs, frequency or PWM output, state in or output
- **State in and outputs**
process- and host controlled
- **Frequency in and outputs**
frequency measurement up to 1 MHz (Chronos method), frequency output up to 10 kHz
- **Counter**
Up/down counter, quadrature counter with reference zero recognition (reset/enable), up to 1 MHz
- **PWM in and output**
measurement of duty cycle and frequency, output with variable frequency and/or duty cycle
- **Time measurement**
- **Outputs freely scalable**
- **Galvanic isolation**
of I/O-signals, power supply and interface
Isolation voltage 500 VDC
- **Electromagnetic Compatibility**
according EN 61000-4 and EN 55011

DS NET Hardware

DS NET DIO8 DIGITAL IN/OUT EXPANSION MODULE

DIGITAL INPUTS	
Number	8
Input voltage	max. 30 V _{DC}
Input current	max. 2 mA
Switching threshold	TTL or programmable
Signal voltage „0“	-3... 5 V _{DC} (EN61131-2, Type1)
Signal voltage „1“	11... 30 V _{DC} (EN61131-2, Type1)
Galvanic isolation	500 Veff group/group and against power supply and interface
FUNCTION	
STATE	
Reaction time	10 µs
8-fold Bit-Set	All eight inputs can be transmitted as a single variable with BCD coding. However, other function definitions, e.g. for a frequency counter, will override this setting.
FREQUENCY MEASUREMENT	
Method	Chronos, optimized by combination of time measurement and pulse counting. Recognition of the direction of rotation (0°, 90°).
Frequency range	1 Hz up to 1 MHz
Time base	0.001 up to 1 s
Counter frequency (reference)	48 MHz
Resolution	0.002 %
PWM MEASUREMENT	
Input frequency	1 Hz up to 1 MHz
Resolution	21 ns
Configuration of the measurement type	Counter for duty cycle, frequency
COUNTER	
Method	forward/backward counter (additional direction input), quadrature counter (for rotation direction detection the phasing between two inputs is used), quadrature counter with reference zero and reset/enable (for rotation direction detection the phasing between two inputs is used, additionally inputs for reference zero and reset/enable are used)
Counter	32 bit
Counter frequency	1 MHz
TIME MEASUREMENT	
Function	Measuring of time between two edges, measuring of high time, low time and high/low relation
Time range	1 µs up to 32 s
Resolution	21 ns

DS NET Hardware

DS NET DIO8 DIGITAL IN/OUT EXPANSION MODULE

With a DS NET DIO8 connectors for digital inputs are available. Those will accept all mentioned signals as it is required. The following combinations are possible:

DIGITAL OUTPUTS	
Number	8
Contact	open drain p-channel MOSFET (short circuit proof)
Load	30 VDC/500 mA (ohmic Load)
FUNCTION	
STATE	
Reaction time	10 μ s
8-fold Bit-Set	All eight outputs can be used by a single variable with BCD coding. However, other function definitions, e.g. for a frequency output, will override this setting.
FREQUENCY OUTPUT	
Frequency range	0.1 Hz up to 10 kHz
Accuracy	0.01 %
PWM OUTPUT	
Frequency range	0.1 Hz up to 10 kHz
Resolution	21 ns

With a DS NET DIO8 connectors for digital outputs are available. Those will accept all mentioned signals as it is required. The functionalities frequency output and PWM output can be used 4 times in maximum.

DS NET Hardware

DS NET DI08 DIGITAL IN/OUT EXPANSION MODULE

POWER SUPPLY	
Power supply	10 up to 30 V _{DC} , overvoltage and overload protection
Power consumption	approx. 2 W
Influence of the voltage	<0.001 %/V
ENVIRONMENTAL	
Operating temperature	-20°C up to +50°C
Storage temperature	-40°C up to +85°C
Relative humidity	5 % up to 95 % at 50°C, non condensing
Vibration	MIL-STD 810F 514.5, procedure I
Shock	MIL-STD 810F 516.5, procedure I
MECHANICAL	
Case	Aluminum
Dimensions (W x H x D)	(27 x 120 x 105) mm
Weight	approx. 200 g
Mounting	DIN EN-rail
CONNECTION	
Standard	20 pin screw terminal