MD32.1

Input and Output Module for SMT Systems for Acquiring and Generating Digital Signals

The MD32.1 has 32 digital channels which can be configured either as inputs or outputs. Furthermore, a range of different supply voltages is available which can be used, for example, to supply connected transducers.

Areas of Application

- Acquisition of switch and button states
- Acquisition of digital outputs and stimulation of digital inputs of electronic controls
- Use as trigger input or trigger output
- Alarm outputs for critical system states or threshold violations (e.g. activation of light and acoustic signals)
- Output of status information

Advantages

- Channels can be used either as inputs or outputs
- Various output drivers available
- Can be adapted to suit different voltage and power levels using external signal conditioning
- Visual display of both channel group state and module state

Signal Conditioning

The inputs and outputs of the module are divided into eight groups of four I/Os. Each of these channel groups is led through via a separate connector and also has two independently settable supply voltages. The channels are configured as input or output channels in groups; the channels of different groups are galvanically isolated from each other. If required, an internal pull-up resistor can be activated for each channel. Half of the 32 outputs are open-collector outputs, the other half push-pull stage.

Software Functions

The digital I/Os of the MD32.1 – just like other measurement and output channels of the Softing Measurement Technology – are set and/or read in equidistantly within a cycle time that can be defined by the user. In addition, the module is capable of generating dynamic signals (e.g. PWM signals) as well as of acquiring their relevant characteristics (frequency, period duration, duty cycle, high and low times). Further measure variables (e.g. counters, angles, distances, …) can be derived from these in the measuring software PEA.

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Technical Data

General

Number of channels	32
Channel organization	8 groups each of 4 channels Signal acquisition or signal generation can be set per channel group
Data rate	1 SPS … 2 kSPS online, can be set per module
Transducer memory	TEDS ready

Signal Acquisition

Operating modes	Digital input / frequency / PWM (duty cycle) / period duration / thigh / tlow Can be set per channel
Input voltage range	0 V … 5 V
Frequency range	0,2 Hz … 1 MHz
Counter resolution	10 ns
Input impedance	≥1 MΩ
Galvanic isolation	Per channel group

Signal Generation

Operating modes		Digital output / frequency / PWM (duty cycle), can be set per channel
f	Frequency range	10 Hz … 100 kHz
	Duty cycle	50 %
PWM	Frequency range	10 Hz … 5 kHz
	Duty cycle	1 % … 99 %
Updating time		Value modification phase-locked to output signal (frequency, PWM) Value modification phase-locked to data rate (digital output)
Counter resolution		200 ns
Output driver channels 1-16		Open collector (≤5 V, 60 mA)
Output driver channels 17-32		Push Pull TTL (low: <0.55 V at <64 mA, high: >2.0 V at <15 mA)
Galvanic isolation		Per channel group

Environmental Conditions

Storage	-30 °C … +85 °C, 10 % … 90 % rel. humidity, non-condensing
Operation	-30 °C … +70 °C, 10 % … 90 % rel. humidity, non-condensing

Order Numbers

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