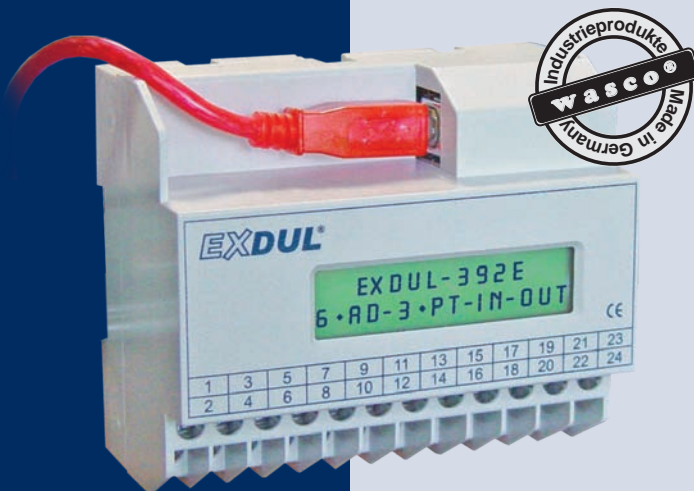


# EXDUL-392E100

**USB Module with 4 Analog Voltage Inputs, 2 Analog Current Inputs, 1 Optocoupler Input, 1 Optocoupler Output, 3 Temperature Measuring Units PT100 and LCD Display**



- 4 A/D inputs 16 bit**  
voltage measurement
- 2 A/D inputs**  
current measurement 4..20mA
- 1 optocoupler input**
- 1 optocoupler output**
- 3 temperature measuring units** PT100 3-wire sensing
- 1 counter 32 bit**
- LCD Display**

## SPECIFICATIONS

EXDUL-392 features either four ground referenced or two differential 16-bit A/D input channels. Several bipolar input voltage ranges (+/-0.63 V, +/-1.27 V, +/-2.55 V, +/-5.1 V, +/-10.2V) can be adjusted. The two bipolar current inputs (+/- 20mA) are calibrated to 4..20mA. For temperature measurement the module features 3 measuring units with PT100 sensors, each of which with individual current source and metering inputs. The conversion process including the associated configuration of the A/D components (selection of range and channel) is triggered by software commands. Additionally the module provides one digital input and one digital output which are opto-isolated galvanically by high-quality optocouplers and are equipped with additional protection diodes. The special high power output optocoupler copes with a switching current up to 150 mA. The optocoupler input may be programmed and used as a 32-bit counter input if required. An external power supply or the USB interface powers the module with the required operating voltage. The programmable LCD display presents digital and analog I/O status information or programmable user-specific data.

### A/D inputs voltage

4 inputs single-ended (se) or 2 inputs differential (diff) or combined se/diff selectable via software  
Resolution: 16 bit  
Input voltage range bipolar:  
+/-0,63 Volt, +/-1,27 Volt, +/-2,55 Volt, +/-5.1 Volt, +/-10.2 Volt  
FIFO: 10000 values  
Input resistance: 500 MΩ  
Over voltage protection: 50V  
max. sampling rate:100kHz

### A/D inputs current

2 inputs  
Resolution: 15 bit  
Measuring range +/- 20mA  
Calibrated to 4..20mA  
Input resistance 120Ω  
FIFO: 10000 measured values  
max. sampling rate 100kHz

### Optocoupler input

1 bipolar channel  
Over voltage protection diodes  
Input voltage range  
high = 10..30 Volt  
low = 0..3 Volt

### Optocoupler output

1 channel  
High capacity optocouplers  
Reverse polarity protection  
Output current: max. 150 mA  
Switching voltage: max. 50 V

### Counter

1 programmable counter 32 Bit (allocated to the optocoupler input)  
counting frequency: max. 5 kHz

### 3 Temperature measuring units PT100

3-wire sensing

### LCD Display

Matrix display with 2 lines and 16 columns presenting 16 signs each line  
Programmable for presentation of customized data or I/O status display

### Operation voltage

via USB port or via external power supply  
+10 V...+30 V

### USB interface

USB 2.0 compatible  
USB connection Plug-and-Play (hot pluggable)

### Connection Terminals

1 \* 24-pin screw terminal block  
1 \* USB port type B

### USB connecting cable

1 \* USB plug type A  
1 \* USB plug type B

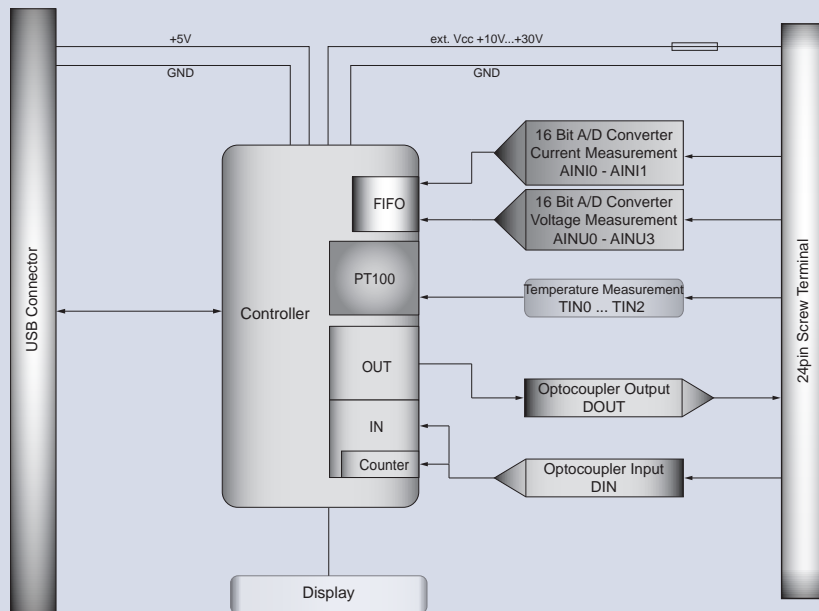
### Dimensions

105 mm x 89 mm x 59 mm (l x b x h)

### Casing

Insulating plastic casing with integrated snap-on technology for DIN EN rail mounting. Suitable for control and engineering technology mounted to control and distribution boxes, surface mounting or mobile use on a desk.

## BLOCK DIAGRAM



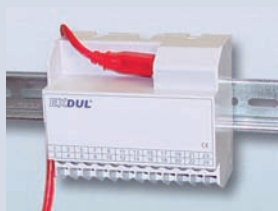
## PIN ASSIGNMENT

The Terminals Vcc\_EXT und GND\_EXT are designated for an application of an external supply voltage of 10 ... 30 V.

### Screw Terminal CN1

AINU1+	2	1	AINU0+
AINU3+	4	3	AINU2+
AINI0-	6	5	AINI0+
AINI1-	8	7	AINI1+
FORCE0+	10	9	AGND
FORCE0-	12	11	RTDIN0+
RTDIN1+	14	13	FORCE1+
FORCE2+	16	15	FORCE1-
FORCE2-	18	17	RTDIN2+
DOUT0-	20	19	DOUT0+
DIN0-	22	21	DIN0+
GND_EXT	24	23	Vcc_EXT

## ASSEMBLY AND APPLICATION OPTIONS



Top-hat Rail Mounting



Wall Mounting



Mobile Use on a Desk

The module provides a 24-pin screw terminal block for connecting the external power supply and the analog or digital inputs and outputs. The compact chassis enables the module to be used as a portable device with a notebook. For mechanical or control engineering it can also be easily wall mounted or attached to DIN mounting rail.

## PROGRAMMING

### Windows®:

Driver and program examples for Java, VB.NET, C++.NET, C#.NET, LabView Tutorial

### Linux®:

Driver and program examples for C, C++ and Java (see manual)

on enclosed CD or download at:  
[www.messcomp.com](http://www.messcomp.com), Section Support - Software

## SCOPE OF DELIVERY

USB Module EXDUL-392E

USB connection cable (Typ A-B) 3m long

German Description (English on request)

Installation and sample programs

## ORDER INFORMATION

EXDUL-392E

EDP-No. A-382220

USB Optocoupler I/O Module

## SUITABLE ACCESSORIES

### DR-60-24

EDP-No. A-3425

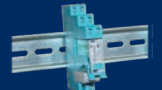
Power supply providing an output 24 V / 2,5 A, closed construction design, contact-protected screw terminals, overload protection via current limitation, Power-On-LED



### F4652-24-Set

EDP-No. A-351024

Industrial high-power relay combination of two change-over contacts 250 V / 8 A and free-wheeling diode, snap-on technology for DIN EN top-hat mounting



For more detailed information about the here listed and other accessories we refer to the corresponding data sheets

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