



## USB controlled isolated I/O system

- **Hardware Watchdog**
- **WAGO Cage Clamp connectors**
- **Windows 10, Linux, 32/64-bit**

### Features

- **12 Relay Outputs**
- **12 Optocoupler Inputs**
- **High Retention USB connector**

### Applications

- **Industrial I/O**
- **Safety Circuits**



### Overview

The DIO-3460 is a space-saving industrial I/O module. It provides for save cable connections due to the use of WAGO Cage Clamp connectors rather than screw terminals (which, even if properly torqued at installation time, might loosen, especially whenever there are vibrations or significant changes of temperature).

A high retention USB connector allows for 50% more retention force than the standard USB preventing accidental disconnect.

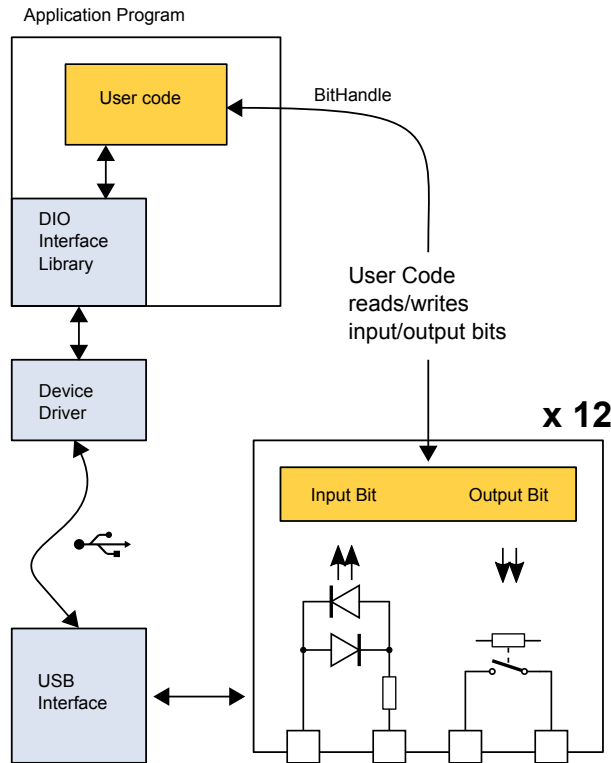
### Software

Application software can read the state of input ports and control the state of the relay outputs.

Integrated watchdog functionality opens all relay contacts if the communication with the controlling application program is broken, or an internal firmware stuck has been detected.



## DIO Architecture

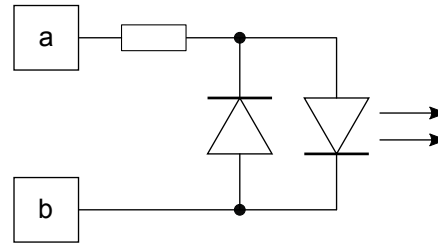


## Specifications

### Input Data

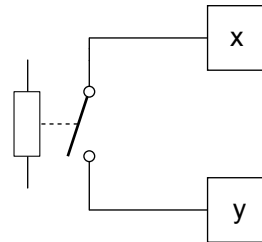
**Maximum Input Voltage:**  $\pm 30V$  (DC/rms AC)

**Input:** Logic L  $\leq +0.8V$ , Logic H  $\pm 5V \dots \pm 24V$ , ( $\pm 0.5mA \dots \pm 3mA$ )



### Relay Output Data

**Warning:** Switching inductive and/or capacitive loads create voltage and/or current peaks, which may damage the relay. Protective circuits need to be used.



**Rated Power** (any DC combination of V/A not to exceed their individual limits):  $\leq 10W$

**Switching Voltage** (DC or peak AC):  $\leq 200V$

**Switching Current** (DC or peak AC):  $\leq 0.5mA$

**Carry Current** (DC or peak AC):  $\leq 1A$

**Contact Resistance** (@0.5V/50mA):  $\leq 1m\Omega$

**Breakdown Voltage across contacts** (DC across contacts, according to EN60255-5 ):  $\geq 250V$

**Operating Time** (incl. bounce; measured with w/ nominal voltage):  $\leq 0.5ms$

**Release Time:**  $\leq 0.1$  ms

**Supply Voltage (USB):**  $5V \pm 5\%$

**Supply Current (USB):** 180 mA max.

#### **Isolation (USB to I/O)**

**Creepage distance (PCB design):**  $\geq 3.2$  mm

**Breakdown Voltage (Relays, contact to coil):** 4.25kV DC,  
3kV rms AC

**Isolation Voltage (Optocouplers):** 2.5kV rms AC, 60  
seconds

#### **Environmental and Physical**

**Size (including connectors):** 105 mm W x 113 mm H x  
32 mm D

**Weight (net, including connectors):** 160 g

**Operating ambient temperature:** 0 ... 50°C

**Storage temperature:** -20 ... 80°C

**Relative humidity:** 5 ... 95%, non-condensing

**USB connector:** Extraction force  $\geq 15$ N, Mating force  $\leq$   
35N

#### **Ordering Information**

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**DIO-3460** - Adapter (excluding connectors, no USB cable),  
Software Download Card

**DCK-3460** - Connector Kit with 6 connectors WAGO  
733-108 and USB cable (1m length)

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