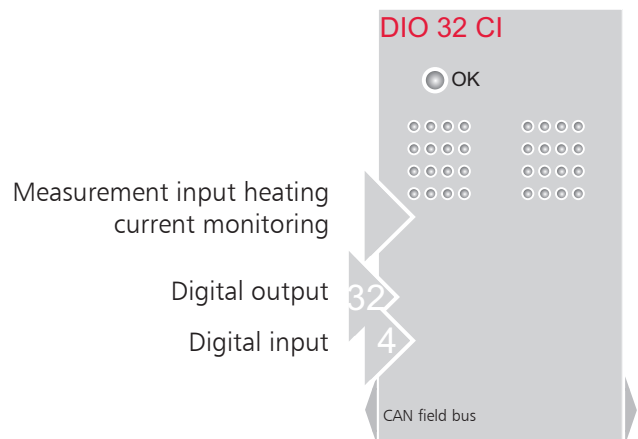
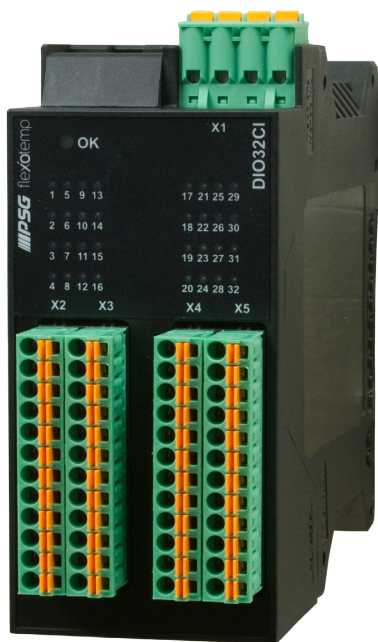


## Digital In-/Output Interface, Current Input

flexotemp®

### DIO 32 CI



#### Features

- Module with 32 digital outputs and 4 digital inputs
- 2 x 3-channel analog input for registration of heating current by external current transformers (three phases)
- CANopen norm slave based on DS-401
- Applicable with flexotemp® PCU and flexotemp® MCU, in I/O nodes by flexotemp® CANBC
- Model ME-Bus (connectable)
- Status-LED
- Control LED's for digital outputs
- Compact design

#### Function

- Application of digital in- and -outputs as control outputs and function in- / outputs (also for Soft-PLC)
- For heating/cooling outputs output of proportional, pulse width modulated control signal
- Heating current monitoring of control zones in heating mode (independent from control or manual mode)
- Switching behavior can be adapted to the actuator type
- Functional integration in flexotemp® PCU and flexotemp® MCU

#### Benefits

- Easy, peripheral configuration of flexotemp® control system with remote I/O's
- Peripheral signal processing
- Easy expandability and integration in own applications
- Compact housing
- Little for installation

#### Ordering designations

	Order number
flexotemp® DIO 32 CI	RR 2200/DIO32CI

## Technical Data

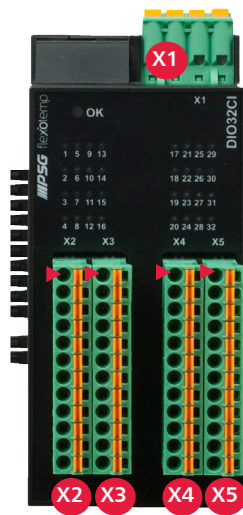
<b>Digital inputs (DI)</b>		Number: 4, configurable by flexotempMANAGER	
	Type	Logic input, indirect-coupled	
	Rated input voltage	0...30 VDC	
	Rated input current	<10 mA at 24 VDC	
	Connecting cable	Cable length < 30 m	
<b>Digital outputs (DO)</b>		Number: 32, configurable by flexotempMANAGER	
	Type	Logic output, direct-coupled, short-circuit-proof	
	Rated output voltage	10...30 VDC	
	Rated output current	Per output 100 mA at $T_A = 25^\circ\text{C}$	
	Connecting cable	Cable length < 30 m	
<b>Connection data In-/outputs</b>		Conductor cross section solid, stranded min/max 0.2 mm <sup>2</sup> /1.5 mm <sup>2</sup> ; Conductor cross section stranded with ferrule without plastic sleeve min/max 0.25 mm <sup>2</sup> /1.5 mm <sup>2</sup> ; Conductor cross section stranded with ferrule with plastic sleeve min/max 0.25 mm <sup>2</sup> /0.75 mm <sup>2</sup> ;	
<b>Measurement input Heating Current Monitoring</b>		2 x 3-phase, summation current measurement; by external current transformers (refer to accessories - heating current monitoring) Input voltage 42 mV <sub>EFF</sub> /A (Default / configurable by flexotempMANAGER)	
	Connecting cable	Cable length < 30 m	
<b>Data interfaces</b>			
	CAN	Field bus for I/O - and bus coupler modules	
	Address range	CANopen norm slave based on DS401, address range 1...127 automatically	
	Transfer rate	250 KByte fixed	
	Max. tolerable bus length (m)	250	
	Device internal terminating resistor	Automatic	
	Protocol	CANopen	
<b>Power Supply</b>		Electronics	Outputs
	Rated voltage / max. power consumption 18...30 VDC / 2 W (internal by system bus) Not designed for operation on DC power supply.	Supply External mains supply 10-30 VDC Not designed for operation on DC power supply.	
	Fuse protection	External by PCU and/or CANBC	4 A M
	Protection equipment	Overvoltage protection	Overvoltage protection, reversed polarity
	Connection data	Conductor cross section solid, stranded min/max 0.2 mm <sup>2</sup> /1.5 mm <sup>2</sup> ;	
	Connecting cable	Cable length < 30 m	
<b>Ambient temperature limit</b>		Operation: 0...55 °C, transport, storage: -20...60 °C, operation limit: 0...60 °C	
<b>Atmospheric humidity limit</b>		Operation: 0...90 % relative atmospheric humidity, no condensation Transport, storage: 0...95 % relative atmospheric humidity, no condensation	
<b>Mounting</b>		Installation on DIN rail (DIN 50022); horizontal installation position; see installation	
<b>Dimensions (H x W x D in mm)</b>		99 x 22.5 x 114.5	
<b>Case</b>		Phoenix ME 45 Bus 10/2	
<b>Weight</b>		0.4 kg	
<b>Electrical security</b>		Class 3, safety extra-low voltage; complies with EN 61010	
<b>Protection type</b>		Housing and terminal IP 20	
<b>Standards</b>		Complies with EN 61326-1	
<b>CE marking</b>		The device complies with the European Directives for electromagnetic compatibility (complies with EN 61326-1).	
<b>General</b>			
	LED displays	Refer to status display of LED's	
	Data backup	Data backup of all parameters in EEPROM (power failure save)	
	Software update	By CAN interface	



The action concerning the handling of ESD devices must be observed!

Electrostatic sensitive devices!

## Connection overview



X1	Power supply outputs
X2	Digital outputs O1...O12
X3	Digital outputs O13...O16 Heating current monitoring pin C1*, C2*
X4	Digital outputs O17...O28
X5	Digital outputs O29...O32 Digital inputs IN1...IN4
LED OK	Operation display
LED 1...32	Signalizes the status of the digital outputs

## Pin assignment

### X2 Digital outputs

12-pole spring-force terminal

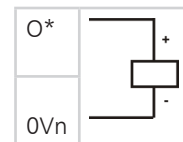
Pin	X2	Function / signal
1	O1	Digital output 1
2	O2	Digital output 2
3	O3	Digital output 3
4	O4	Digital output 4
5	O5	Digital output 5
6	O6	Digital output 6
7	O7	Digital output 7
8	O8	Digital output 8
9	O9	Digital output 9
10	O10	Digital output 10
11	O11	Digital output 11
12	O12	Digital output 12

### X4 Digital outputs

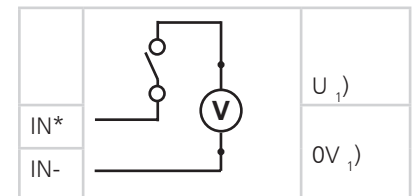
12-pole spring-force terminal

Pin	X4	Function / signal
1	O17	Digital output 17
2	O18	Digital output 18
3	O19	Digital output 19
4	O20	Digital output 20
5	O21	Digital output 21
6	O22	Digital output 22
7	O23	Digital output 23
8	O24	Digital output 24
9	O25	Digital output 25
10	O26	Digital output 26
11	O27	Digital output 27
12	O28	Digital output 28

### Digital output 1...32 (0Vn see X1)



### Digital input 1...4



1) by X1 or external power supply

### X3 Digital outputs

#### Heating Current Monitoring

12-pole spring-force terminal

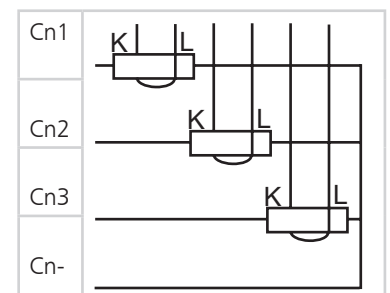
Pin	X3	Function / signal
1	O13	Digital output 13
2	O14	Digital output 14
3	O15	Digital output 15
4	O16	Digital output 16
5	C11	Heating current input
6	C12	Heating current input
7	C13	Heating current input
8	C1	Ground heating current input
9	C21	Heating current input
10	C22	Heating current input
11	C23	Heating current input
12	C2	Ground heating current input

### X5 Digital in-/outputs

12-pole spring-force terminal

Pin	X5	Function / signal
1	O29	Digital output 29
2	O30	Digital output 30
3	O31	Digital output 31
4	O32	Digital output 32
5	n.a.	
6	n.a.	
7	n.a.	
8	IN1	Digital input 1
9	IN2	Digital input 2
10	IN3	Digital input 3
11	IN4	Digital input 4
12	IN-	Reference potential IN *

### Heating current C1\*, C2\*



## X1 power supply

### Digital in- / - outputs

4-pole spring-force terminal

Pin	X1	Function and/or signal
1	U1	Power supply *) (internally bridged)
2	U2	
3	0V1	Ground
4	0V2	Power Supply (internally bridged)

## Status display of LED's

LED-OK (green)	
flashing (1 Hz)	Boot mode
flashing (2 Hz)	Pre operational mode
Continuous light	Operational mode

\*) External fuse protection necessary

## Installation

