C-DIAS Current Output Module   CCO 041

The CCO 041 is a C-DIAS module used to control four valves. To ensure a good and dynamic performance from the valve, the start current and secondary current (continuous) can be set.

The four output stages are short-circuit and overload protected. The module can also operate without a CPU (stand alone). In this case, four digital inputs (TTL signal) are available over which each output, with fixed parameters, are controlled.

If the card is powered and externally applied to the C-DIAS reset +5 V, it runs in stand-alone operation and responds to the digital inputs and always starts in stand-alone operation. If connected to a CPU, it will run in CPU mode after setting an Enable bit.

The digital inputs can be used (wired) exclusively in stand-alone operation. The card itself does not have a power supply (24 V→5 V) for stand-alone operation
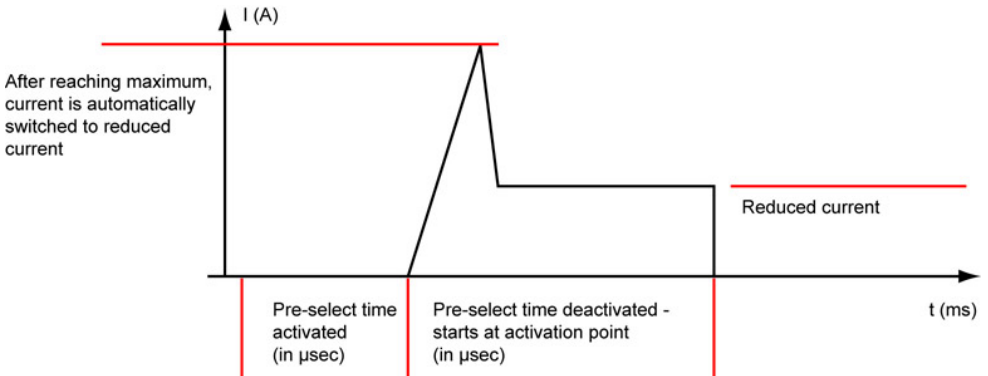
Technical Data

Current output

Number of outputs	4
Supply voltage	18 – 55 V DC
Starting current	0 – 3.5 A*
Default resolution value for start current	8-bit
Max. Pulse duration of start current	3 ms
Secondary current	0 – 1 A*
Default resolution value secondary current	8-bit
Status display	4 x LED (yellow)

*Each output current is dependent on the specific properties of the respective valve.

After reaching maximum, current is automatically switched to reduced current

Reduced current

Pre-select time activated (in µsec)

Pre-select time deactivated - starts at activation point (in µsec)

To prevent thermal problems, the temperature of the CCO 041 is controlled. At 120° C (on the circuit board), the card is deactivated by the hardware.

Digital inputs

Number of inputs	4	
Input voltage	Typically +5 V	Maximum +7 V
Signal level	Low: <+0,8 V	High: >+2,0 V
Switching threshold	Typically 1,4 V	
Input current	1 mA at 5 V	
Input delay	Typically 100 µs	
Status display	None	

No "external" (from outside the control cabinet) signals may be applied to the digital inputs.

Electrical requirements

Valve supply voltage	18 – 55 V	
Current consumption of the Valve supply voltage	Maximum 14 A	
Voltage supply from C-DIAS bus	+5 V	
Current consumption of C-DIAS bus (+5 V supply)	95 mA	120 mA

With long power lines, and external buffer capacitor (Elko) is required (component size in the C-Dias module is limited).
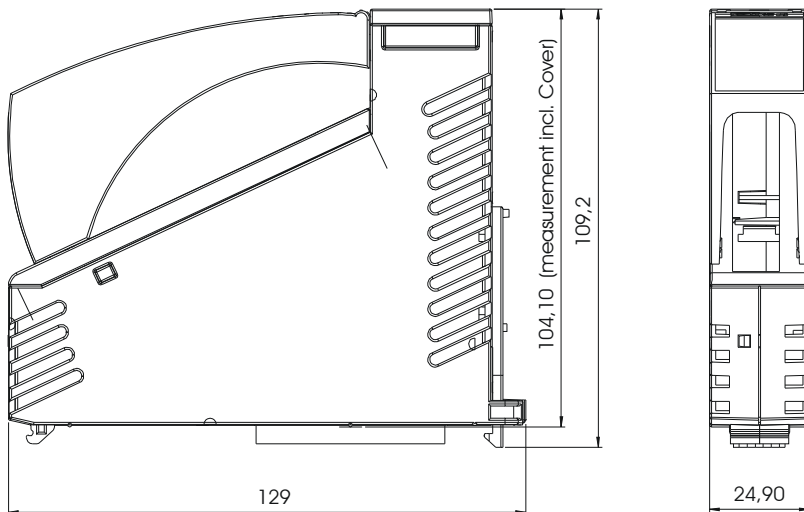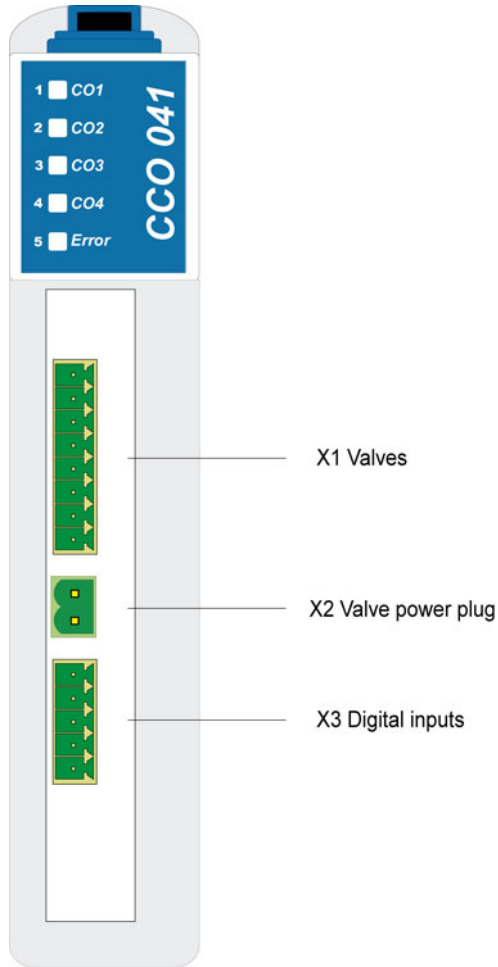
Miscellaneous

Article number	12-030-041
Hardware version	1.x

Environmental conditions

| Storage temperature	-20 – +85 °C	
Operating temperature	0 – +60 °C	
Humidity	0 - 95 %, uncondensed	
EMV stability	According to EN 61000-6-2:2001 (industrial area)	
Shock resistance	EN 60068-2-27	150 m/s²
Protection Type	EN 60529	IP 20

Mechanical Dimensions

104,10 (measurement incl. Cover)

109,2

129

24,90

Connector Layout

CCO 041

1 ☐ CO1
2 ☐ CO2
3 ☐ CO3
4 ☐ CO4
5 ☐ Error

X1 Valves

X2 Valve power plug

X3 Digital inputs
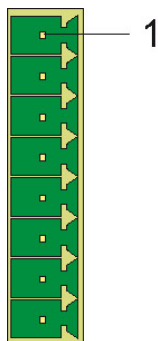
X1: Valves

Pin	Function
1	Valve1 +
2	Valve1 -
3	Valve2 +
4	Valve2 -
5	Valve3 +
6	Valve3 -
7	Valve4 +
8	Valve4 -

X2: Valve power plug
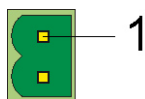
Pin	Function
1	18 – 55 V
2	GND

X3: Digital inputs
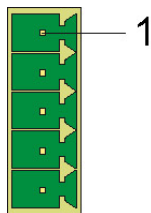
Pin	Function
1	DI 1
2	DI 2
3	DI 3
4	DI 4
5	GND

Applicable connectors

X1: 8-pin Phoenix plug FK-MCP1,5/8-ST-3,5
X2: 2-pin Phoenix plug FKC2,5/2-ST-5,08
X3: 5-pin Phoenix plug FK-MCP1,5/5-ST-3,5

The complete C-DIAS CKL 041 connector set is available from SIGMATEK under the article number 12-600-161.

Status Displays

LED-Nr.	LED color	Definition
1	Yellow	Current output 1
2	Yellow	Current output 2
3	Yellow	Current output 3
4	Yellow	Current output 4
5	RED	Error (supply voltage monitor, temperature cut-off , CPU in reset)

Stand Alone

A setup time of 1 s must be maintained before the card can be controlled over the digital inputs.

Starting current	3.35 A*
Secondary current	800 mA*

*Each output current is dependent on the specific properties of the respective valve.

Mounting position

To ensure optimal cooling of the module, the CCO 041 must be mounted as shown (standing). For an angled mounting position, forced convection (cooling fan) must be used.

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Bottom