

Valve control type CAN-I/O 14+

Product documentation



Supply voltage U_B :

10 to 30 V DC

Output current I_A :

Max. 16 A



© by HAWE Hydraulik SE.

The reproduction and distribution of this document as well as the use and communication of its contents to others without explicit authorisation is prohibited.

Offenders will be held liable for the payment of damages.

All rights reserved in the event of patent or utility model applications.

Brand names, product names and trademarks are not specifically indicated. In particular with regard to registered and protected names and trademarks, usage is subject to legal provisions.

HAWE Hydraulik respects these legal provisions in all cases.

Printing date / document generated on: 14.04.2020

Contents

1	Overview valve control type CAN-IO 14+.....	4
2	Available versions, main data.....	5
2.1	CAN module.....	5
2.2	Accessories.....	5
2.3	Software.....	7
3	Parameters.....	8
3.1	General.....	8
3.2	Electrical parameters.....	9
3.3	Standards and directives.....	9
4	Dimensions.....	10

Programmable logic valve controls control and regulate complex mobile or stationary hydraulic systems.

The programmable logic valve control type CAN-IO 14+ is a freely programmable PLC with integrated proportional amplifier.

Highly precise functions are possible thanks to the feedback measurement at the valve outputs.

Thanks to the extensive setting and programming options, the CAN-IO 14+ can be used extremely flexibly.

Features and benefits:

- Up to 8 PWM outputs
- Up to 14 analogue inputs
- High protection class
- CAN bus interface
- Flexible programming
- Free parametrization of all inputs and outputs

Intended applications:

- For controlling proportional valves in mobile machines and in the industry sector
- Connection of analogue proportional valves in CAN bus networks
- Closed control circuits
- Simple expansion of existing systems



Valve control type CAN-IO 14+

2 Available versions, main data

2.1 CAN module

CAN-IO 14+

Order coding	CAN-IO 14+
Order number	6962 945400
Description	Programmable logic control - Up to 8 PWM outputs - Up to 14 analogue inputs - High protection class - CAN bus interface - Flexible programming via C-program or configurable slave - Free parametrization of all inputs and outputs

Other properties [See Chapter 3](#)

2.2 Accessories

CAN-IO 14+ cable

Order coding	CAN-IO 14+: Cable 2.5 m
Order number	6219 3002-00
Description	Fully equipped CAN-IO 14+ central plug type FCA Sicma 211 PL249S0005 with 2.5 m cable. Single wires labelled with open ends for flexible assembly.

CAN-IO 14+ Plug-Set

Order coding	CAN-IO 14+ Plug-Set
Order number	6219 3001-00
Description	For independent assembly of connectors with customer's own number of wires and wire lengths Content: 1 housing with lock 20 crimp contacts, 1.5 mm ² 8 crimp contacts, 2.8 mm ² 12 seals

PEAK-System CAN USB dongle

Order coding	PCAN-USB ADAPTER
Order number	6964 0021-72
Description	USB CAN adapter from PEAK-System. For connection between a CAN-IO 14+ and a PC. Please download the driver software from www.hawe.com/edocs to guarantee problem-free operation.

CAN-IO 14+ Starter Kit

Order coding	CAN-IO 14+ Starter Kit
Order number	6964 0023-10
Description	Connector type FCA Sicma 211 PL249S0005, crimp contacts and cable seals for an individual connection cable design
Port	Europlug type C FCA Sicma 211 PL249S0005 D-Sub plug DE-9 (CAN bus) D-Sub plug DE-9 (RS232) Magnetic plug by DIN EN 175301-803
Protection class	IP 20
Supply voltage	100...240 V AC, 50...60 Hz
output voltage	24 V DC
Output current	Max. 1 A
CAN termination	120 Ω terminal resistor integrated in D-Sub plug
Potentiometer:	R = 10 k Ω P _{max} = 0.5 W U _{max} = 250 V

2.3 Software

Programming

The HAWE CAN-IO 14+ is delivered with firmware. Logic and functions must be programmed or parametrised via logical linking of the inputs and outputs. Without programming or parametrisation, the CAN-IO 14+ does not function!

HAWE Visual Tool

Designation	HAWE Visual Tool
Description	The free software HAWE Visual Tool offers a clear graphic representation of all inputs and outputs. By configuring user parameters, functions can be created with a clear logic. The communication takes place via RS232 or the PEAK Systems CAN-USB dongle.
Functions	Configuration and scaling of inputs and outputs Configuration of the CAN communication Logical linking of inputs and outputs Copying settings
Download	www.hawe.com/edocs

HAWE eDesign

Designation	HAWE eDesign
Description	The free software HAWE eDesign is a graphic programming interface. Pre-defined functions and logic modules can be combined extremely easily to create a program even without knowledge of programming. HAWE eDesign is a pure Cloud solution that requires no compiler installation on the computer. The communication takes place via the PEAK Systems CAN-USB dongle.
Functions	Programming of functions and logic Worldwide access to programs Configuration and scaling of inputs and outputs
Link	edesign.hawe.com

CodeWarrior

Designation	CAN-IO CodeWarrior
Description	The free software CAN-IO CodeWarrior is a programming environment from Freescale. CodeWarrior can be used to program complex functions and controls in C. Extensive function libraries are available. The function modules are specifically adapted to the HAWE product range. The communication takes place via the PEAK Systems CAN-USB dongle.
Functions	C programming environment Debugging
Download	www.hawe.com/edocs

3 Parameters

3.1 General

General parameters

Designation	Programmable logic valve control
Version	Module
Port	Central plug FCA Sicma 211 PL249S0005
Attachment	2 x Ø7
Installation position	As desired
Weight	approx. 170 g
Protection class	IP 68
Ambient temperature	-40 to +85°C

3.2 Electrical parameters

Supply voltage U_B	10 to 30 V DC
Fuse	20 A
Idle current I_L	< 50 mA
Analogue inputs	<p>Max. 14 x analogue inputs, 12 bit resolution, adjustable</p> <ul style="list-style-type: none"> ▪ 0...5 V DC; $R_E = 12.6 \text{ k}\Omega$ ▪ 0...10 V DC; $R_E = 12.6 \text{ k}\Omega$ ▪ 0...20 mA; $R_E = 235 \text{ }\Omega$
Digital inputs	<p>1 x digital input, short-circuit-proof, max. 30 V DC, $R_E = 12 \text{ k}\Omega$ Switching point 4.5 V DC All analogue inputs can also be used as a digital input</p>
PWM outputs	<p>4 x IPWM output with current regulation 4 x PWM output Load current 2.5 A / channel PWM frequency 1 kHz Duty cycle 0...100% Dither frequency 50...250 Hz Dither amplitude 0...100% Suppressor circuit can also be used as an analogue or digital input</p>
Voltage output	1 x 5 V DC, max. 200 mA
Interfaces	<p>1 x CAN bus (ISO 11898-2 CAN 2.0A+B) 1 x RS232 (max. 19.2 kBaud)</p>

3.3 Standards and directives

CE (EMC)	2014/30/EU
E1-approval	2009/19/EC ECE R-10

Layout plan

Pin	Name	Function	Comment
A1	U _B (Output 0...3)	Supply voltage Output 0...3	
A2	RS232 TX	RS232 TX	
A3	AI 5	Analogue input 5	Also digital input
A4	AI 4	Analogue input 4	Also digital input
A5	AI 2	Analogue input 2	Also digital input
A6	AI 1	Analogue input 1	Also digital input
A7	5 V Out	Stabilised 5 V output voltage	
A8	U _B (Output 4...7)	Supply voltage Output 4...7	
B1	IO 3	IPWM Output 3	Also analogue input or digital input
B2	RS232 RX	RS232 RX	
B3	DI	Digital input	Also frequency input
B4	CAN H	CAN High	
B5	U _B	Supply voltage CAN-I0	Also digital input or frequency input
B6	AI 0	Analogue input 0	Also digital input or frequency input
B7	GND	Weight	Also PGND, AGND, RS232 GND
B8	IO 4	PWM Output 4	Also analogue input or digital input
C1	IO 2	IPWM Output 2	Also analogue input or digital input
C2	IO 1	IPWM Output 1	Also analogue input or digital input
C3	IO 0	IPWM Output 0	Also analogue input or digital input
C4	AI 3	Analogue input 3	Also digital input
C5	CAN L	CAN Low	
C6	IO 7 I	PWM Output 7	Also analogue input or digital input
C7	IO 6	PWM Output 6	Also analogue input or digital input
C8	IO 5	PWM Output 5	Also analogue input or digital input

Further information

Additional versions

- Programmable logic valve control type PLVC 8: D 7845 M
- Programmable logical valve control type PLVC 41: D 7845-41
- Proportional amplifier type EV2S: D 7818/1
- Proportional amplifier type EV1D: D 7831 D
- Proportional amplifier type EV1M3: D 7831/2

Application

- Proportional directional spool valve, type PSL and PSV size 2: D 7700-2
- Proportional directional spool valve, type PSL, PSM and PSV size 3: D 7700-3
- Proportional directional spool valve, type PSL, PSM and PSV size 5: D 7700-5
- Proportional directional spool valve banks type PSLF and PSVF size 7: D 7700-7F
- Proportional directional spool valve type EDL: D 8086
- Proportional pressure-limiting valve type PDV and PDM: D 7486
- Directional seated valve type EM and EMP: D 7490/1
- Directional spool valve type NSWP 2: D 7451 N
- Variable displacement axial piston pump type V60N: D 7960 N
- Variable displacement axial piston pump type V30D: D 7960
- Variable displacement axial piston pump type V30E: D 7960 E
- Proportional pressure-limiting valve type PDV and PDM: D 7486
- Proportional flow control valve type SE and SEH: D 7557/1