

Electronics

Electronic accessory components **276**

Type PLVC programmable logic valve control **278**



*Programmable logic valve controls
type PLVC*

Electronic accessory components

Type	Nomenclature	Designs
Accessory component	<ul style="list-style-type: none"> ■ Plugs with no special feature (standard) <ul style="list-style-type: none"> - With rectifier circuit, - With clamp diode, - With LED with economy circuit ■ Amplifier units for proportional solenoids ■ Power supply units 	<ul style="list-style-type: none"> ■ Plugs ■ Modules with screw terminals ■ Cards with terminal strip

Programmable logic valve controls

Type	Nomenclature/Design
PLVC	<p>Programmable logic valve control</p> <ul style="list-style-type: none"> ■ Modular system with <ul style="list-style-type: none"> - Basic modules - Extension modules - CAN bus nodes - Display - Software
CAN-IO	<p>CAN node</p> <ul style="list-style-type: none"> ■ Programmable

5 Electronic accessory components

A range of electronic accessory components is available in various versions for the control of common on/off and proportional solenoids. These include electronic amplifiers in the form of modules and cards and versions integrated in the plug for single and twin solenoids, as well as for pressure switches. A power supply unit for 24V DC solenoid valves is also available. All of these components are tailored to HAWE solenoid valves.

Features and benefits:

- Compact design
- Functions tailored to HAWE products

Intended applications:

- For control of all types of proportional valves
- Plug for visual operation control, prolonging the service life of the solenoid etc.



Nomenclature:

- Plugs with no special feature (standard) With rectifier circuit With clamp diode With LED with economy circuit
- Amplifier units for proportional solenoids
- Power supply units

Design:

- Plugs
- Modules with screw terminals
- Cards with terminal strip

Designs

Plug for solenoid valves (single and twin solenoid)

Brief description	Application
No special feature (standard)	For all applications with no special requirements
Version with LED	Visual operation control and EMC protection (note prolonged cut-off times)
Version with clamp diode	For optimum EMC protection (note prolonged cut-off times)
Version with economy circuit	Increased functional security and prolonged service life of the solenoids by reducing the voltage (pulse width modulation) after a defined period. Recommended for use in areas with high ambient temperatures and/or for application where the solenoids are permanently energised (e.g. safety circuits)
Version with rectifier circuit	Enables use of DC solenoids when a power supply of 110V AC, 230V AC is available

Plugs with no special feature (DC voltage supply) or the version with rectifier circuit for power supply of 110V AC, 230V AC are included as standard in the scope of delivery of the solenoid valve.

Proportional amplifier

Features:

- Constant current control (regardless of the power supply and changes in resistance of the solenoid due to heating effects)
- Improved EMC properties
- Use in a broad temperature range

Adjustable parameters:

- I_{\max} and I_{\min} setting
- Setting for ramp time up to 10 sec
- Reference voltage for potentiometric setpoint generator available
- Option to set dither amplitude and frequency

Type	Brief description	Application
EV 1 M EV 1 G EV 1 D	Module version (board only or built-in housing)	Suitable for installation in switch cabinets, secured with screw terminals
EV 22 K	Card version	Card suitable for control of two proportional solenoids. Use in card holder for one, or in a module rack for max. 3 amplifier cards

Power supply units for solenoid valves

Type	Brief description	Application
MNG	Power supply unit for input voltage 230V AC and output voltage 24V DC, max. power rating 5A	Power supply for solenoid-actuated hydraulic valves or electrical amplifiers for proportional solenoids

Associated technical data sheets:

Please check whether correct links are inserted

Plugs:

- [Socket connectors \(type overview\): D 7163](#)
- Economy circuits for WG 230 actuating solenoids: [Directional seated valves: D 7831](#)
- [Economy circuit plug type MSE 28026 with adjustable economy voltage: D 7832](#)
- [Type MSD 4 P55 line connector with economy circuit for 24 VDC: D 7833](#)

Electronic amplifiers:

- [Type EV1M 2-12/24 and EV1M 2-24/48 electronic amplifier: D 7831/1](#)
- [Electronic amplifier type EV1D: D 7831 D](#)
- [Electronic amplifier type EV1G1-12/24: D 7837](#)
- [Electronic amplifier type EV22K2-12/24: D 7817/1](#)

Power supply units:

- [Power supply unit type MNG 2,5-230/24 and MNG 5-230/24: D 7835](#)

Further information:

- Possible combinations of valves and electronic accessories: [P 7163](#)
- [Joysticks type EJ: D 7844](#)

Programmable logic valve controls:

- Type PLVC 21: [Page 278](#)
- Type PLVC 41: [Page 278](#)
- Type PLVC 8: [Page 278](#)

CAN node

- Type CAN-IO 14: [Page 278](#)

Suitable products:

Lifting modules:

- Type HMT etc.: [Page 166](#)

Prop. pressure valves:

- Type PM, PMZ: [Page 200](#)
- Type PMV, PDV: [Page 188](#)
- Type PDM: [Page 202](#)

- Prop. directional seated valves type EMP: [Page 152](#)
- Prop. directional spool valves type PSL, PSV: [Page 104](#)
- Prop. flow control valves type SE, SEH: [Page 224](#)

Electronic pressure sensors:

- Type DT 11 and DT 2: [Page 266](#)

See also chapter "Equipment for special applications":

- Proportional valves

5 Type PLVC programmable logic valve control

The type PLVC programmable logic valve control is intended for the actuation of complex hydraulic systems. Any movement sequences with pressure, speed and acceleration profiles can be implemented and saved in pre-defined limit areas. Analogue and digital components as well as components linked to CAN bus (e.g. valves, pressure sensors, joystick) can be used via cable or remotely to control tasks. This type of control can also be described as PLC with integrated prop. amplifiers.

High flexibility via:

- Modular systems with extension and enhancement modules (Basic and expansion module)
- Flexible programming
- Different interfaces (RS 232, CAN bus, Profibus)
- All output parameters can be customised
- Software function modules (PLC programs)

Intended applications:

- Construction machinery
- Crane systems
- Complex lifting devices
- Machines for forestry purposes
- Machine tools and press construction



Nomenclature:	Programmable logic valve control
Version:	Modular concept with <ul style="list-style-type: none"> ■ Basic modules ■ Expansion modules ■ CAN bus nodes ■ Display ■ Software

Basic types and general parameters

	PLVC 41	PLVC 21	PLVC 8	CAN-IO 14
Number of inputs ¹⁾				
Digital	27 (3 / 24)	13 (5 / 8)	17 (10 / 7)	1
Analogue	28 (4 / 24)	12 (4 / 8)	23 (11 / 12)	6 (10)
Frequency	3 (3 / -)	3 (3 / -)	3 (3 / -)	-
Emergency stop	x	x	x	-
Number of outputs ¹⁾				
Digital	16 (- / 16)	16 (8 / 8)	13 (- / 13)	4
Analogue (PWM)	16 (4 / 16)	4 (4 / -)	16 (16 / -)	4
Analogue (0 ... 10V)	1 (1/-)	--	--	-
Relay	8 (3 / 8)	4 (- / 4)	--	-
Auxiliary voltage	1 (5V DC)	--	--	-
Interfaces				
RS 232	x	x	x	x
CAN bus	x	x (- / x)	x (x / x)	x
Profibus	--	x	--	-
Voltage supply (10 ... 30V DC)	5A (10A)	5A	5A	10A

1) Always max. number of inputs and outputs, figures in brackets apply to basic modules and expansion modules

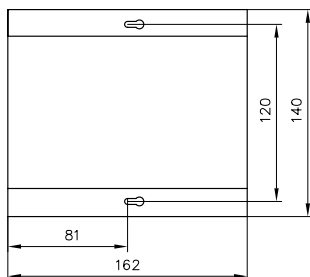
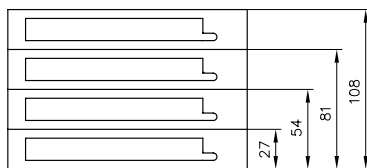
Software function packs (examples):

- Position measurement
- CAN bus communication
- Position and volumetric flow control
- Fault detection
- Controller for closed control circuits
- Ganging
- Electronic volumetric flow distribution
- Stability
- Limit load control
- Pressure control

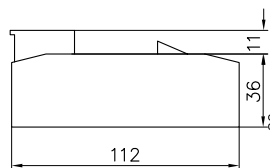
Furthermore, the system allows customers to use the aforementioned PLC programming to very quickly make individual adaptations using structured texts (ST).

Dimensions

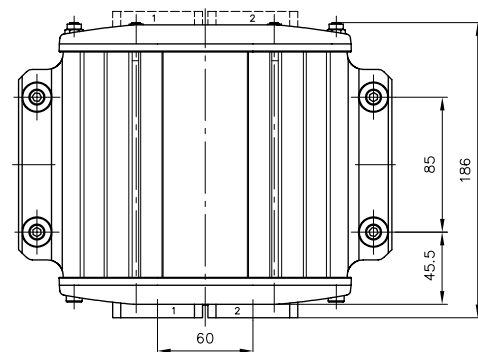
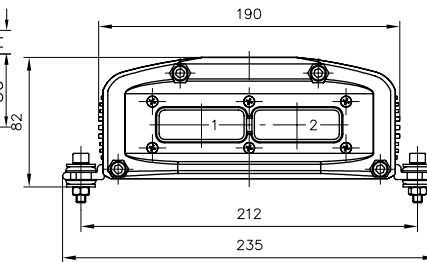
PLVC 41



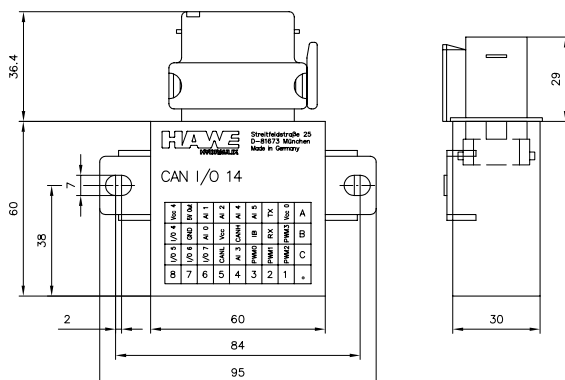
PLVC 21



PLVC 8



CAN-IO 14



Programmable logic valve control:

- Type PLVC 21: [D 7845-21](#)
- Type PLVC 41: [D 7845-41](#)
- Type PLVC 8: [D 7845 M](#)
- Type CAN-IO 14: [D 7845 IO](#)
- Type PM, PMZ: [Page 200](#)
- Type PMV, PDV: [Page 188](#)
- Type PDM: [Page 202](#)

Prop. pressure valve:

- Including type HMT lifting modules: [Page 166](#)
- Type PSL, PSV prop. directional spool valves: [Page 104](#)
- Type SE, SEH prop. flow control valves: [Page 224](#)

See also chapter "Equipment for special applications":

- Industrial trucks
- Mobile hydraulics
- Prop. valve technology