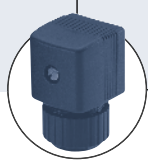




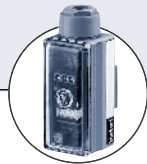
- Control valve for continuous control of liquids
- Low hysteresis and high repeatability
- Control with PWM signal
- Servo-assisted, tight closing valve

Type 6223 can be combined with...



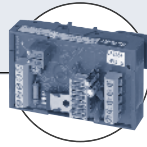
Type 2508

Cable plug



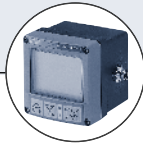
Type 1094

Control electronics
in a plug-on module



Type 1094

Control electronics
DIN-rail mounting
version

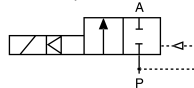


Type 8623-2 to 8625-2

Plug-on controller

The valve Type 6223 can be used for the control of larger flow quantities. Low hysteresis, high reproducibility and good response sensitivity guarantee good positioning behaviour. The valve closes tight. The push-over coil is easy to replace.

Valve operation A



Valve control is done by the control electronics Type 1094.

Servo-assisted,
2-way proportional valve,
normally closed

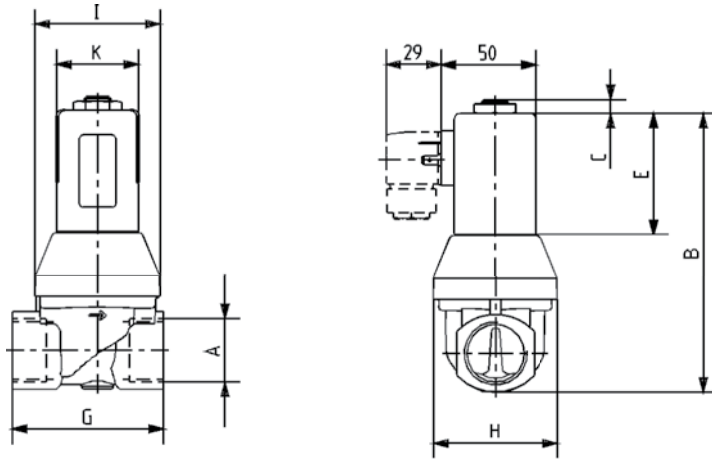
Functional features of the Type 1094 electronic control unit:

- Temperature compensation for coil heating by internal current regulation
- Simple zero and span settings by means of two potentiometers
- Ramp function to dampen fast status changes
- Monitor signal to assist setup and indication of coil current.

Technical data	
Orifice	DN 10, 13 and 20 mm
Body material	Brass, stainless steel
Seal material	FKM
Media	Neutral liquids only, no air or gasses
Media temperature	14°F to 194°F (-10°C to +90°C)
Ambient temperature	Max. 131°F (+55°C)
Port connection	NPT 3/8, NPT 1/2, NPT 3/4, NPT 1
Required control-unit	Type 1094 or Types 8623-2, 8624-2, 8625-2
	Control electronics in a plug-on module or for DIN-rail mounting Plug-on controller with display, set and actual value input
Viscosity	Max. 21 cSt (21 mm ² /s)
Operating voltage	24 V DC
Power consumption	See ordering chart
Duty cycle	Continuous rating 100%
Electrical connection	Tag connector according to DIN 43650 form A
Protection class Valve	IP65 with plug-on module or with cable plug on the valve
Installation	As required, preferably with actuator in upright position
Hysteresis	< 5%
Repeatability	< 1% FS
Sensitivity	< 1% FS
Settling time (90%)	< 200 ms
Span	1:10

Technical data - electronic control unit Type 1094	
Operation voltage	24 V DC
Voltage tolerance	± 10 %
Ripple	± 10 %
Power consumption	0.5 W (without valve)
Input signal	0 – 20 mA, 4 – 20 mA or 0 – 10 V
Input impedance	210 Ω (current input) 17 Ω (voltage input)
Output signal	PWM (pulse-width modulation) signal for valve control
Ramp time	0 – 10 s, adjustable
Monitor signal	1 mV ± 1 mA effective coil current
Versions	Variant M Variant H
	Plug-on module DIN rail mounting version
Protection class	(NEMA 4) when mounted on valve
Variant M	IP65 on valve
Variant H	IP00

Dimensions [mm]



Orifice	Port connection A	B	C	E	G	H	I	K
10.0	NPT 3/8 or NPT 1/2	85.5	3.7	20.0	50.0	37.7	38.0	32.0
13.0	NPT 1/2 or NPT 3/4	106.2	3.3	24.0	58.0	44.5	50.5	40.0
20.0	NPT 3/4 or NPT 1	147.6	7.0	35.0	80.0	66.0	66.0	43.0

Characteristics of the proportional valve

Pressure drops	C _v value for liquids [GPM]
Subcritical (p ₂ > p ₁ x .53)	$C_v = \frac{Q_L \sqrt{Sg}}{\sqrt{\Delta p}}$
Supercritical (p ₂ < p ₁ x .53)	$C_v = \frac{Q_L \sqrt{Sg}}{\sqrt{\Delta p}}$

- C_v = Liquids – flow coefficient in GPM at 1 PSI Δp
- Sg = Specific gravity (Specific gravity of air and water @ 60°F=1)
- p₁ = Inlet pressure in PSIA
- p₂ = Outlet pressure in PSIA
- Δp = Differential pressure (p₁-p₂)
- PSIA = Gauge pressure (PSIG) + 14.7
- Q_L = Liquid flow in GPM

DTS 1000082571 EN Version: - Status: RL (released) freigegeben | validé printed: 13.08.2008

Ordering Chart for Proportional Valves for liquids (other versions on request)

Orifice [mm]	Port connection [NPT]	C _v value water [GPM]	Pressure range [PSI] ¹⁾	Power consumption [W]	Body material	Item no.
10	3/8	1.6	7 – 145	8	Brass	457 138
	1/2	1.6	7 – 145	8	Brass	457 139
13	1/2	2.9	7 – 145	10	Brass	457 140
	1/2	2.9	7 – 145	10	Stainless Steel	458 404
	3/4	2.9	7 – 145	10	Brass	457 141
	3/4	2.9	7 – 145	10	Stainless Steel	458 405
20	3/4	5.8	7 – 145	15	Brass	457 142
	3/4	5.8	7 – 145	15	Stainless Steel	458 406
	1	5.8	7 – 145	15	Brass	457 143
	1	5.8	7 – 145	15	Stainless Steel	458 407

- **C_v value:** Flow rate value for water, measured at 68°F and 14.5 PSI pressure differential over a fully opened valve.
- Delivered **without** control electronics unit and cable plug (see *Accessory Ordering Information*).

¹⁾ Pressure data [PSI]: Overpressure with respect to atmospheric pressure

Note regarding device selection

The calculation or rating of the orifice of control valves is very important for problem-free functioning within the application. The orifice must be selected so that, on the one hand, the desired flow range is reached, and, on the other, that a sufficient proportion of the total pressure loss takes place over the valve when fully opened. Guide value: $\Delta p_{\text{valve}} > 30\%$ of the total pressure.

Make use of the consultation of our Burkert engineers as early as possible in the planning phase.

Accessory Ordering Information

Version	Input signals	Item no.
Cable plug Type 2508 according to DIN EN 175301-803*, form A, unconnected, 0 – 250 V AC/DC according to DIN EN 175301-803*, form A, unconnected, with 3 m cable, 0 – 250 V AC/DC		008 376
		783 573
Control electronics Type 1094 directly mountable on valve plug-on module	4 – 20 mA	060 644
	0 – 10 V	060 459
Control electronics Type 1094 DIN rail body for mounting on 35 mm standard profile rails	0 – 10 V, 0 – 20 mA or 4 – 20 mA (adjustable)	060 657
Flow controller Type 8623-2 for direct mounting on the valve	2 frequency inputs 2 – 1000 Hz 1 setpoint input 4 – 20 mA or 0 – 10 V	143 569
Flow pressure regulator Type 8624-2 for direct mounting on the valve	1 actual process value input 4 – 20 mA or 0 – 10 V 1 setpoint input 4 – 20 mA or 0 – 10 V	143 570
Temperature Controller Type 8625-2 for direct mounting on the valve	1 PT100 input 1 setpoint input 4 – 20 mA or 0 – 10 V	143 571

* So far DIN 43650

- The output signal to the valve of control electronics/controller is pulse width modulated.
- The scope of delivery of the Plug-On Control Electronics, cable plugs and Plug-On controller includes the flat sealing and mounting screws.

For product inquiries, use the specification sheet for proportional valves!

Design data for Proportional Valves

► Fill in this sheet and send it to your local Burkert sales representative.

<input type="text"/>	Quantity	<input type="text"/>	Desired delivery date
Process data			
Medium	<input type="text"/>		
State of medium	<input type="checkbox"/> liquid	<input type="checkbox"/> gaseous	<input type="checkbox"/> vaporous
Medium temperature	<input type="text"/>	°F	
Maximum flow rate Q_{nom}	<input type="text"/>	Unit:	<input type="text"/>
Minimum flow rate Q_{min}	<input type="text"/>	Unit:	<input type="text"/>
Inlet pressure during operation at nominal rating	$p_1 =$	<input type="text"/>	PSI
Outlet pressure during operation at nominal rating	$p_2 =$	<input type="text"/>	PSI
Max. inlet pressure	$p_{1max} =$	<input type="text"/>	PSI
Ambient temperature	<input type="text"/>	°F	
Process data			
Body material	<input type="checkbox"/> Brass	<input type="checkbox"/> Stainless steel	
Seal material	<input type="checkbox"/> FKM	<input type="checkbox"/> other	<input type="text"/>
Electrical control unit (Type 1094)	<input type="checkbox"/> Cable plug version	<input type="checkbox"/> Switch cabinet version	
	<input type="checkbox"/> 0-20 mA	<input type="checkbox"/> 4-20 mA	<input type="checkbox"/> 0-10 V
<p>■ Note: Please state all pressure values as overpressures with respect to atmospheric [barg].</p>			

► Please do not forget to fill in the customer data below

Company	Contact person
Customer No.	Department
Address	Tel./Fax
Postcode/Town	E-mail