SERIES Counter and time valves

V80

time valves – pneumatic and electric
preset counter – pneumatic
unit counter –pneumatic

Function	Technical Data	Application
Time valves electric and pneumatic time valves are used for the precise time control of switchings or systems. They are used in order to delay certain processes, to limit them in time (e.g. pumping processes) or to limit their number or to interrupt them for a certain time period/interval of time. **Preset counters** are applied in order to receive a pneumatic output signal after the sequence of preset pulses. **Unit counters** find application with counting processes in pneumatic controls, in order to count the number of pneumatic pulses.	The specifications as well as the application range are attributed to the respective article in the catalogue.	■ ex-protection (on request) ■ dosing technology ■ milking plants ■ analysis technology ■ sprinkling technology ■ mechanical engineering ■ control and regulator technology ■ pneumatic controls ■ mining

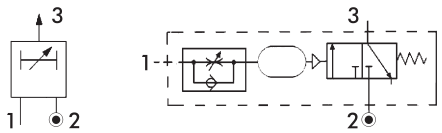
Logic time valve - pneumatic
manifold mounting

3/2-way NC - NO

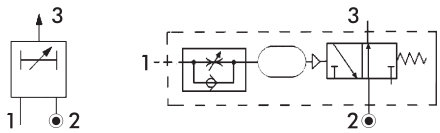
Application: Time valves with switch-on delay (NC) are used to effect a delayed transmitting of the incoming media flow, after a preset time period. On the other hand, Time valves with switch-off delay (NO) are used for blocking the incoming media flow after a preset time period.

Function: The in each case necessary delay time can be set with the turning knob. As soon as the preset time span has run out, the valve opens (NC) or closes (NO).

switching symbol switch-on delay NO



switching symbol switch-off delay NC



Technical data

Valve design	:	poppet valve
Fastening	:	manifold mounting, build-in or build-on mounting
Pressure range	:	3 up to 8 bar
Time range	:	see table
Flow rate (Q max)	:	180 l/min
Operating temp.	:	-15°C up to + 60°C
Media	:	compressed air, filtered, unlubricated

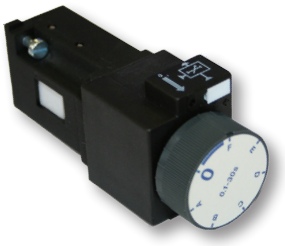
Connections

1 = control connection

2 = inlet

3 = outlet

Housing	spring	valve seat	turning knob
plastic	stainless steel	NBR	plastic



Logic time valve - pneumatic
with adjustable switch-on delay

NC

Order-no.	type	adjustment range seconds	air flow rate at 6 bar in Nl/min	VPE
24802212	VL-ZV32-NG-3S	0,1 bis 3	180 l/min	1
24802211	VL-ZV32-NG-30S	0,1 bis 30	180 l/min	1
24802213	VL-ZV32-NG-180S	10 bis 180	180 l/min	1

Logic time valve - pneumatic
with adjustable switch-off delay

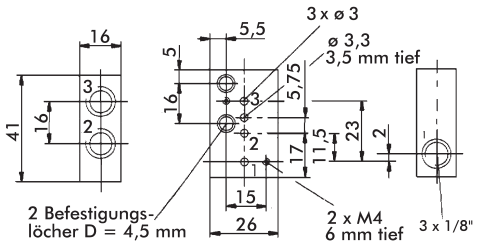
NO

Order-no.	type	adjustment range seconds	air flow rate at 6 bar in Nl/min	VPE
24807231	VL-ZV32-NO-3S	0,1 bis 3	180 l/min	1
24802214	VL-ZV32-NO-30S	0,1 bis 30	180 l/min	1
24802215	VL-ZV32-NO-180S	10 bis 180	180 l/min	1

Base plate - logic
for time vlave NC and NO

Ø4 mm

Order-no.	type	plug-in connection	design	VPE
24818315	VL-GPE-3x1/8	G1/8	externer Steueranschluss 1	1



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Application: Pneumatic timers are used for the precise time control of pneumatic pressure pulses in pneumatic switchings or systems.

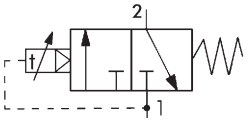
Function

As soon as the inlet 1 is supplied with pressure, the time clockwork begins to run. Outlet 2 is exhausted. After running out of the preset time, the valve switches from 1 to 2. The time setting is continuously variable by means of a turning knob, the reset is effected by the interruption of the supply air at the inlet 1. The outlet 2 is then exhausted.

Technical data

Display	:	numerical scale
Time range	:	see table
Temperature range	:	0°C up to +60°C
Operating pressure	:	2 up to 6 bar
Response pressure	:	1,2 +/- 0,4 bar
Release pressure	:	0,3 +/- 0,2 bar
Pressure tightness	:	5 l/h
Media	:	compressed air, free of dirt, humidity and oil
Filtering	:	5 µm
Connection	:	M5 female thread
Fastening	:	front frame
Protection class	:	IP 40 (with protection lid IP 54)
Runtime error	:	+/- 1 % of the scale end value
Reset time	:	min. 200 ms
Service life	:	5 x 10^6 time cycle
Resist. to oscillation	:	30 m/s (10-500Hz)
Shock resistance	:	400 m/s (while 5 ms)
Mounting position	:	optional

switching symbol



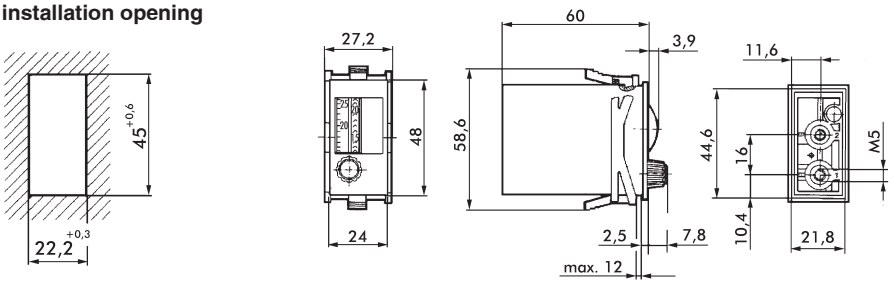
1 = inlet
2 = outlet

Housing	connections	sight glasses
plastic	brass-female thread M 5	acrylic glass

Time valve - pneumatic M5

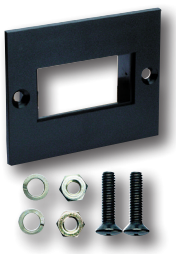
Order-no.	type	thread	time setting range seconds	VPE
25250056	VH-ZVP-T2-2-30S	M5	2 bis 30	1
25250057	VH-ZVP-T3-20-300S	M5	20 bis 300	1

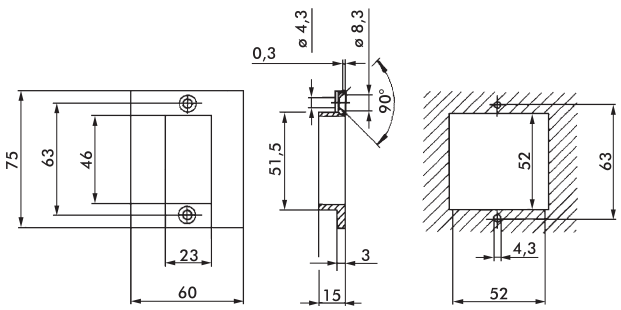
installation opening



Front frame for time valve - pneumatic

Order-no.	type	for mounting at	VPE
25230997	VH-FRR-60x75	VH-ZVP-T2 und T3	1





V80

Time valves - pneumatic-mechanic
2-parts, cumulative

3/2-way NC

Application: Time valves are used in order to switch pneumatic valves according to a specified timing.

Function

Adjustable and readable time valve for the regulation of timings in pneumatic control units. Time valves as complete modules consist of a pulse transmitter and a preset counter. With the air supply of 2 – 6 bar at the connection X the pulse transmitter starts and each second gives a pulse to the preset counter. These pulses at the same time control a wind up piston of the pulse transmitter, which pulls up a spring-operated storage, that, blocked by a mechanic power regulator, operates until the preset time interval has run out. A reset pulse on y resets the valve to the preset time. The new timing starts automatically.

seconds-timer : 1 figure = 1 second
minutes-timer : 1 figure = 1 minute

Setting of the time preselection

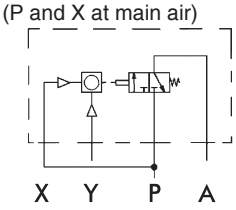
1. Turn the white lever according to the direction sign and hold on.
2. Pre-select the desired sequence of figures
3. Let go the white lever

Note:

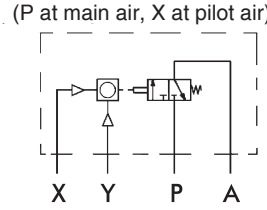
In order to avoid a runtime error in the first time interval, after the turning off of the air supply at the inlet X, you have to make a break of 1 minute before the counter is started again.

Connection scheme

without time storage
(P and X at main air)



with time storage
(P at main air, X at pilot air)



X = pilot pulse for time
Y = pilot pulse
P = main air
A = outlet in rest position, exhausted

Technical data

Design	:	timer with mechanic gear regulator
Connection	:	M 5
Counting range	:	1 up to 99999 seconds or minutes
Counting mode	:	cumulative
Runtime error	:	seconds-timer : +/- 2,0 %
		minutes-timer : +/- 0,5 %
Reset	:	manually-operated or pneumatic (at least 180 mS)
Pressure range	:	2 up to 6 bar
Response pressure	:	at X 1,8 bar
Temperature range	:	0°C up to +60°C
Protection class	:	IP 55 with use of protection cap
Reproducibility	:	+/- 0,15 bar
Media	:	compressed air, free of dirt, humidity and oil
Filtering	:	5 µm
Display	:	5 digits
Type-Nr.	:	497675

Housing	Connections
plastic	brass

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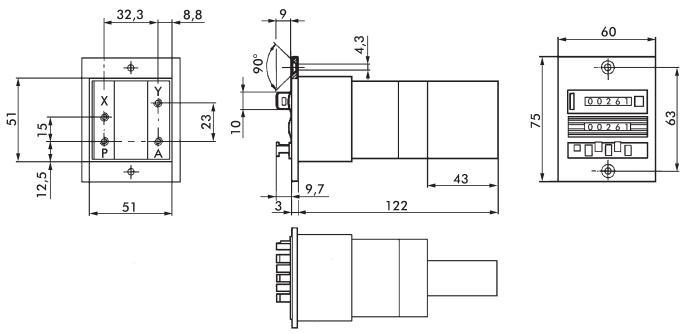
Time valve - pneumatic-cumulative

3/2-way NC

Bestell-Nr	type	thread	time setting range	VPE
25250070	VH-ZVP-T4-1-99999-sek	M5	1 bis 99999 sek	1
25250075	VH-ZVP-T5-1-99999-min	M5	1 bis 99999 min	1



Preselection counter - pneumatic, cumulative

Application: pneumatic preselection counters are used for example to ensure the switching off of pneumatic pumps after a certain number of strokes, which have been set before. If a specific number of signals (e.g. strokes) have passed, a valve in the preselection counter blocks and the media flow is stopped.

Function

The desired preselection value is entered. For this purpose you have to press the reset button at the same time. With each counting pulse the value 1 is added from the display (in 2 half-steps). When the preset preselection value is added after the end of the pulse (in the second half-step), a pneumatic valve is activated and an output signal is given.

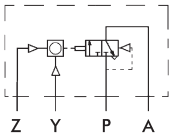
Setting of the time preselection:

1. Turn the white lever according to the direction sign and hold on.
2. Pre-select the desired sequence of figures
3. Let go the white lever

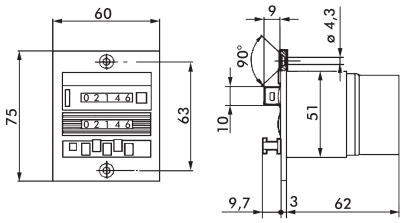
Note

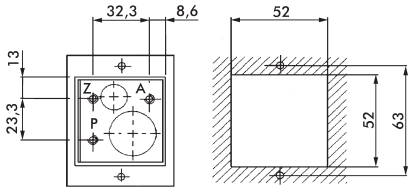
The time between the last counting pulse and the pneumatic reset has to be 50 ms at a minimum.

Connection scheme



Z = impulse input "counting"
Y = impuls input "resetting"
P = air supply
A = signal output





Technical data

Connection	:	M 5
Counting range	:	0 up to 99999
Counting input	:	cumulative
Pulse duration	:	min. 8 ms
Counting frequency	:	max. 20 Hz
Reset	:	manually operated or pneumatic (pulse lenght min. 180 ms)
Reste frequency	:	max. 1 pro 2 s
Signal length	:	from reaching the preselection to reset
Pressure range	:	2 up to 8 bar
Temperature range	:	0°C up to +60°C
Protection class (IEC 144)		IP 40 with connected tubes
Media	:	compressed air, free of dirt, humidity and oil
Filtering	:	5 µm
Mounting position	:	roller axis horizontal

Preselection counter - pneumatic — NC / M5

Order-no.	type	thread	counting range	VPE
25236041	VH-VZP-V1-1-99999	M5	0 bis 99999	1

Protective cover for Preselection counter VH-VZP-V1

Application: The protection class IP65 is ensured with these protective covers. For this purpose, the protective covers type VH-ZVP-T4, T5 and VH-VZP-V1 must be used. As well as when using the front frame VH-FRR-60x75), with the types VH-ZVP-T2-2-30s, VH-ZVP-T3-30-300s.

Clear cover	sealing
Polycarbonat	synthetic rubber

Protective cover - with knob — plastic

Order-no.	type	for mounting at	VPE
25237998	VH-Z-SDK-60X75mm	VH-ZVP-T4, T5 u. VH-VZP-V1	1

Protective cover - with lock — plastic

Order-no.	type	for mounting at	VPE
25233999	VH-Z-SDS-60X75mm	VH-ZVP-T4, T5 u. VH-VZP-V1	1

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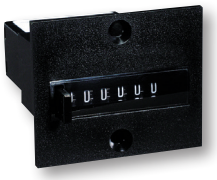
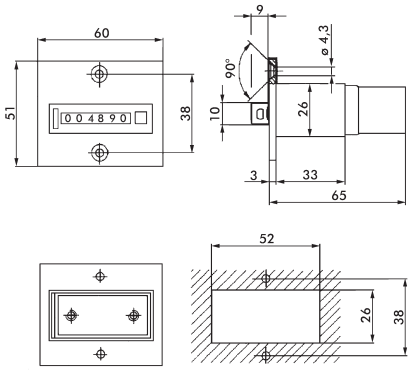
Cumulative counter - pneumatic

Application: versatile applicable cumulative counter for counting various processes, the timing of which can be expressed by pulses, with the possibility to set to zero before a new counting process. The counter is used as event, unit or batch/lot counter, as integrator, for programme step indication and more.





Function

A pneumatic cumulative counter consists of a pneumatic drive unit and a mechanical figure drum system. The counter is switched by pneumatic pulses, which come from a transmitter (switch, sensor etc.).
Over the connection (tube fitting) the piston of the drive system is supplied with pneumatic pulses. With the tappet of the piston, the switching bow is activated which is loosely connected to the switching jack. With each air pulse the switching jack switches the units figure drum around the first half (first half-step) of a figure and at the same time it draws a spring, which takes over the further transport during the pressure drop (second half-step).

Note

With a pneumatic reset the time between the last counting pulse and the pneumatic reset has to be 50 ms at least.

Technical data

Display	:	6-stellig
Height of figures	:	4 mm
Operating pressure	:	2 up to 8 bar
Media	:	compressed air, free of dirt, humidity and oil
Filtering	:	5 µm
Operating temperature	:	-15°C up to +60°C
Connection	:	M 5
Mounting position	:	optional
Resist. to oscillation	:	50 m/s² according to IEC 068 2-6
Shock resistance	:	400 m/s² according to IEC 068 2-27
Counting input	:	cumulative
Pulse duration	:	min. 8 ms
Counting frequency	:	max. 25 Hz
Reset	:	pneumatic with a pulse length of min. 180 ms or manually-oper. with a button.

Housing	Connections
plastic	brass

Cumulative counter - pneumatic — M5

Order-no.	type	thread	counting range	VPE
25218041	VH-SZ-PP-0495464-M5	M5	0 bis 999 999	1

Protective cover for cumulative counter VH-SZ-PP

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Protective cover - with knob — plastic

Order-no.	type	for mounting at	VPE
25238001	VH-Z-SDK-51x60mm	VH-SZ-PP	1

Protective cover - with lock — plastic

Order-no.	type	for mounting at	VPE
25238000	VH-Z-SDS-51x60mm	VH-SZ-PP	1