

Pneumatic Timers and Counters

Kuhnke's wide selection of Counters and Timers provide easy solutions for constructing pneumatic logic systems. Counters are available with 4 to 8 digit readouts, panel or base mounting with several options to suit the application. Five versions of pneumatic timers with ranges from .1 second to 100 hours with a variety of valve and mounting options provide the most complete product line available in the industry.

Counters are constructed with durable molded bodies. White digits on black background make units easy to read. Units are available with or without manual resets and a variety of options. A special type allows the counter to be reset by a pneumatic pulse in addition to a manual reset button. A predetermining counter includes an output valve to stop production when the count is reached.

Timers depending on design, are constructed of molded bodies usually with aluminum bases to provide sturdy fitting connection points. Timers are available in on delay or off delay versions and incorporate a 3/2 or 5/2 output valve.

Typical timing circuits are included in the catalogue section to assist in designing easy installations.



Panel Mounted Pneumatic Counter

50670



The pneumatic counter can be used as an event, part or lot counter. The counter registers pneumatic impulses on a 6 digit display. Totalizer operates with impulse pressure between 2 and 8 bar. The counter can be reset either manually via a reset button, or by a pneumatic signal to a specially provided port.



Technical Specifications

Op. Pressure:

2-8 bar

Connections:

M5 ports

Display:

Black with white digits (6 numbers)

Reset:

Manual button on cover or pneumatic signal of 180 ms duration.

Media:

Filtered air

Control Connections:

Port Z - Counter pulse input

Port Y - Reset

Duty Cycle:

Continuous

Min. pulse duration 8 ms

Min. pause 10 ms

Operating Ambient:

0°C to + 60°C

Weight:

7 grams

Materials:

Molded body

Dimensions:

Face plate: 60mm W x 50mm H

Behind panel: 62mm Deep x

50mm Wide x 26mm High

Panel Cut Out:

52mm Wide x 28mm High

2 mounting holes required.

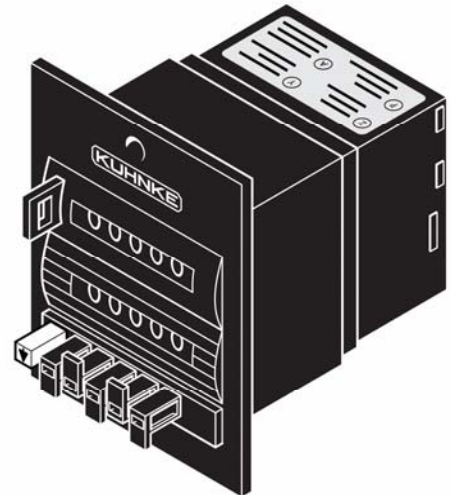
Hardware included

Panel Mounted Pneumatic Predetermining Counter

50680

Counter is used for selecting the number of desired operations on a production run. The number of operations is set on the lower scale by holding down a white button and setting the count to be reached. The upper scale is a 5 digit totalizer. When the count reaches the lower scale setting, a built-in 3/2 valve is switched to provide a pneumatic output to stop machine or signal that the count has been reached. Valve remains switched until counter is reset.

The counter operates with an impulse pressure between 2 and 8 bar and can be reset either manually via a reset button or by a pneumatic signal to a specially provided port.



Technical Specifications

Op. Pressure:

2-8 bar.

Connection:

M5 ports

Display:

Black with white digits
(5 numbers)

Reset:

Manual button on cover or
pneumatic signal of
180 ms duration.

Media:

Filtered air

Control Connections:

Port Z - Counter pulse input
Port Y - Reset
Port P - Supply air to 3 way valve
Port A - Output signal from valve

Duty Cycle:

Continuous
Min. pulse duration 8 ms
Min. pause 10 ms

Operating Ambient:

0°C to +60°C

Weight:

12 grams

Materials:

Molded body

Dimensions:

Face plate: 60mm W x 75mm H
Behind panel: 62.5mm Deep x
51mm Wide x 50mm High

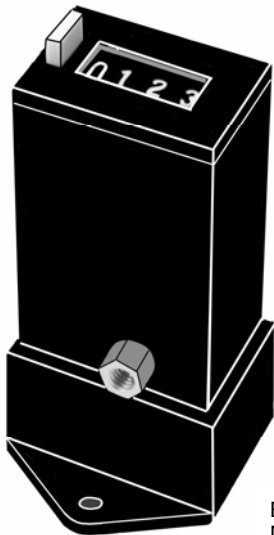
Panel Cut Out:

52mm Square
2 mounting holes required.
Hardware included.

Panel or Base Mounted Pneumatic Counters



Standard Clip Mounting



Base Mount



These pneumatic totalizers can be used as an event, part or lot counter. The counter registers pneumatic impulses on 4, 6 or 8 digit displays. Standard units operate with impulse pressures between 1.5 and 6.5 bar. Low pressure models operate between 0.5 and 2 bar. A variety of options include panel mounting with screws or mounting clips and surface mount with base or rear stud. The counters are available with or without manual reset.

Description		Catalogue Number			
		Panel Mounted		Surface Mounted	
		Standard Clip Mtg.	Screw Fastening	With Base	Stud Mounting
With Manual Reset	4 Digit	PM14-21	PM14-11	APM14-01	PM14-01
	6 Digit	PM16-21	PM16-11	APM16-01	PM16-01
	8 Digit	Not Available	Not Available	Not Available	Not Available
Without Manual Reset	4 Digit	PM14-20	PM14-10	APM14-00	PM14-00
	6 Digit	PM16-20	PM16-10	APM16-00	PM16-00
	8 Digit	PM18-20	PM18-10	APM18-00	PM18-00

Options

For Low pressure version (0.5 to 2 bar) add an "L" prefix to the catalogue number.

A manual reset guard can be added to help prevent accidental resetting of the counter. Add suffix "V" to the catalogue number.

For a spade key reset add suffix "VS" to the catalogue number.

For a secret reset add an "S" suffix.

Standard designs have 10-32 NPT ports.

Technical Specifications

Op. Pressure:

1.5 to 6.5 Bar Std.
0.5 to 2 bar Low Press.

Connections:

10-32 port, Option 1/8.

Display:

Black with white digits

Reset:

With or without manual reset.

Media:

Filtered air

Duty Cycle:

Continuous
Min. pulse duration 8 ms
Min. pause 10 ms

Operating Ambient:

0°C to + 60°C

Weight:

7 to 13 grams

Materials:

Molded body, steel frame.

Dimensions (approx.):

4 Digit – 22mm H x 33mm W x 66mm D.
6,8 Digit – 22mm H x 50mm W x 66mm D.
For Screw mtg. add 1" to H dim.
For base mtg. add 1" to D dim.

Panel Cut Out:

4 Digit – 22mm H x 32mm W
6,8 Digit – 22mm H x 47mm W

Miniature Panel Mounted Timer

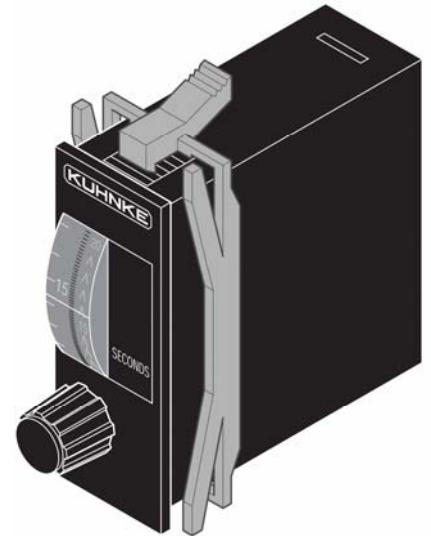
(Up to 5 minutes)

2 to 30 Seconds **51020-03**
 20 to 300 Seconds **51020-30**

The Mini-timer is an adjustable panel mounted time delay device (normally closed valve). Timing is set by adjusting the front dial. The timer is equipped with 2 vertical scales that indicate the set time and the time remaining in the cycle (countdown time).

To begin the timing operation, air pressure is applied to port one. When the set time is reached the internal valve is switched over to provide an output at port 2. The valve remains open until the input air is switched off. Removing the air supply at any time resets the timer.

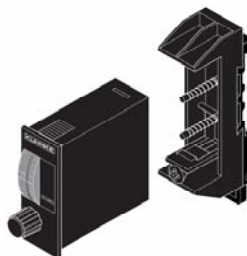
The mini timer is constructed of a molded body with a clear plastic lens for viewing the scales. Ports, M5 are located on the rear of the unit. The timer is panel mounted with a built in retaining clip.



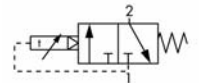
Accessories

A molded bezel (catalogue no. **51025**) can be added to the panel to provide screw fastening of the timer for easy removal. The bezel cutout size is 52 x 52mm and the bezel dimensions are 60mm wide x 75mm high.

A rear mounting bracket, (catalogue no. **51031**) can be used to mount the timer in the rear of the panel or on a DIN rail as required. The bracket has built-in connections for side M5 porting.



Rear Mounting



Technical Specifications

Op. Pressure:
2 to 6 bar

Connections:
M5

Media:
Filtered, dry air.
Non-lubricated

Operating Valve:
3/2 (NC) - internal exhaust
Orifice size - 1mm
Flow @ 6 bar – 40 litre

Timing Start:
Application of line pressure to port 1.

Reset:
By removal line pressure

Reset Time:
200 ms

Repeatability:
± 0.3 Sec. 51020-03
± 3 Sec. 51020-30

Time Setting:
Via adjustment knob.

Setting Accuracy:
± 0.6 Sec. 51020-03
± 6 Sec. 51020-30

Materials:
Molded housing.

Operating Ambient:
0°C to 60°C

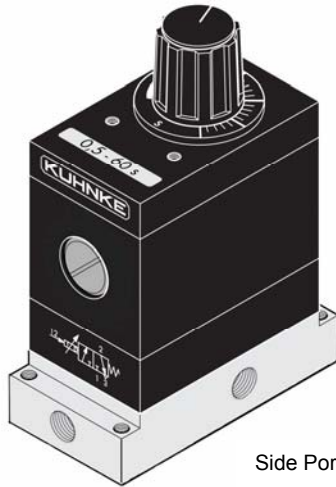
Dimensions (inches):
24mm W x 48mm H x 68mm D.

Panel Cutout:
20mm W x 45mm H.

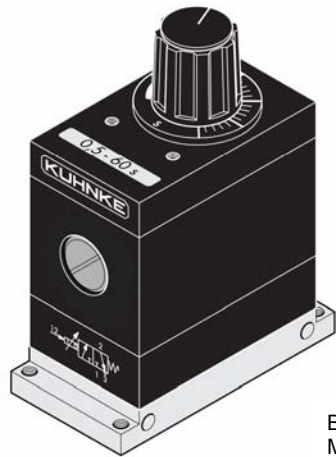
Mounting:
Retaining Clip.

Rear Mounted - Set-it, Forget-it Timer

(Up to 3 minutes)



Side Ported 1/8



Bottom Ported
M5

The Series 51 timer is an adjustable precise time delay control device. The timer is available with either an on delay- (NC) or off delay- (NO) 3/2 built-in valve. It is designed for mounting along with valves or other logic devices and is available with M5 bottom ports, or 1/8 side ports. Bottom ported timers can also be panel mounted using (2) threaded M3 inserts on the top cover.

Timing operation can be set up in 2/2; either via direct connection of the pressure line to be timed (1/8 ported only) or via a separate pilot signal. When pressure is applied to the input (or pilot port) the timing sequence begins by setting a vacuum within the timer. Using atmospheric pressure (independent of line pressure), the timer begins the preset timing cycle. At the end of the cycle an internal 3/2 valve is switched providing an output. The timer resets automatically after removal of the control signal.

Technical Specifications

Op. Pressure:

1.5 to 8 bar

Connections:

M5 (10-32) or
1/8 ports

Media:

Filtered air, non lubricated.

Operating Valve:

3/2 - internal exhaust
Orifice size - 2mm
Flow @ 6 bar - 200 liters

Timing Start:

Application of pilot (or Line)
pressure to control port.

Reset:

By removal of pilot (or Line)
signal - independent of whether
the time interval has elapsed or not.

Reset Time:

200 ms

Repeatability:

± 2% of selected time.

Time Setting:

Via adjustment knob.

Operation:

Timing cycle uses atmospheric
pressure drawn into vacuum.

Air Consumption:

During timing cycle only -3 l/m

Materials:

Polyamide housing, aluminum
base, Buna N seals.

Operating Ambient:

-10°C to 60°C

Dimensions (mm):

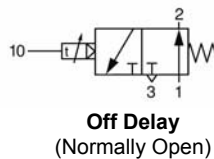
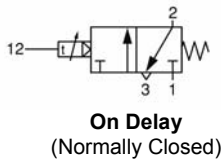
	M5 port	1/8 port
Height	92	105
Width	36	36
Length	70	70
Weight	35 gr.	45 gr.

Mounting:

Via 4 holes in base.

Selection Chart

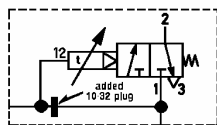
Diagrams



Connections

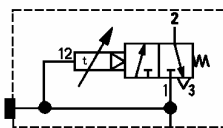
1/8 Side Ported Timers

Side ported timers are supplied with a 10/32 port plug to set up preferred connections.



Separate Pilot Signal

For a *separate (isolated) pilot signal*, insert a 10-32 plug into the internal port (inside port 12 or 10). Use loctite or equal to seal the port. Then connect a separate pilot input signal at port 12 (10).



Supply and Pilot Same Source

For using the *same source* as the supply for the output valve and pilot signal, plug port 12 (10) using a 1/8 plug and connect the switched air supply to port 1. Discard the 10-32 plug.

10-32 (M5) Bottom Ported Timers

Timer is supplied only with separate (isolated) control input signal port. Connections are located on the underside of the timer base.

The bottom ported timer can be panel mounted using (2) M3 threaded inserts on the top cover.

Timing Range		Catalogue Number	
		1/8 Side ported	M5 Bottom Ported
On Delay (NC)	.5 to 60 Seconds	51006-00US	51006-00
	1 to 120 Seconds	51012-00US	51012-00
	1 to 180 Seconds	51018-00US	51018-00
Off Delay (NO)	.5 to 60 Seconds	51006-01US	51006-01
	1 to 120 Seconds	51012-01US	51012-01
	1 to 180 Seconds	51018-01US	51018-01

Port Identification

- 12 - Control input signal (NC version).
- 10 - Control input signal (NO version).
- 1 - Air supply.
- 2 - Valve output.

Power Connections

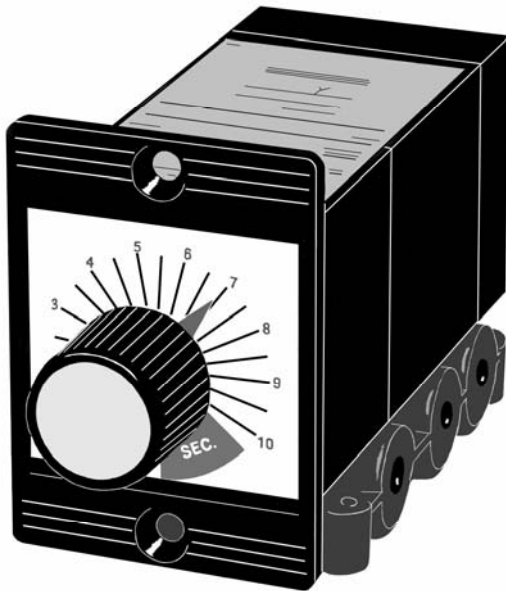
For installations requiring larger output valves, use the standard timer and connect a pneumatically operated single air piloted 3/2 or 5/2 valve of the size required to the timer output. Contact factory with size requirements.

Typical Circuits

See typical timing circuit diagrams at the end of the timer catalogue section for help in constructing pneumatic timer circuits.

Panel or Subplate Mounted Pneumatic Timer

(Up to 3 Minutes)



Panel Mounted PMT
timer with SPA1B
subplate

The Type PMT timer is an adjustable precise time delay control device. The timer is available with an on delay (NC) output.

Timing operation is dependent upon the input of a separate control signal which starts the timing sequence by setting a vacuum within the timer. Using atmospheric pressure (independent of line pressure), the timer begins the preset timing cycle. At the end of the cycle an internal 3/2 valve is switched providing an output. The timer resets automatically after removal of the control signal.

The PMT has a separate subplate enabling the unit to be supplied with 10-32 or 1/8 porting. The timer can be panel mounted with a bezel, or in the rear on a sub plate.

Technical Specifications

Op. Pressure:

1 to 6.5 bar.

Connections:

10-32 or 1/8 ports
via bottom sub plate

Control Pressure:

(A) Low Press. – 1 to 6.5 bar
(B) Standard – 2 to 6.5 bar

Media:

Filtered air or non-aggressive
gas, non-lubricated.

Timing Valve:

Flow @ 6.5 bar – 0.3 liters

Dial Indicator:

Displays set time.

Timing Start:

Application of pilot pressure
to control port.

Reset:

Automatic by removal of
pilot signal.

Reset Time:

60 ms @ 3 bar

Repeatability:

± 3% of selected time.

Time Setting:

Via adjustment knob.
Accuracy ±10%

Operation:

Timing cycle uses
atmospheric pressure
drawn into vacuum.

Air Consumption:

0.3 l/m @ 6.5 bar

Materials:

Acetal and polycarbonate
enclosure. Diaphragms-
Buna N

Operating Ambient:

0°C to 65°C

Dimensions (mm):

(including sub plate)
Height – 55
Width – 38
Depth – 108

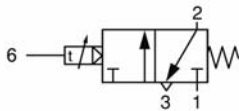
Mounting:

Via sub plate (2 holes) or if
Panel mounted, through a
38mm square cutout.
2 mounting holes required,
hardware included.

Selection Chart

Timing Range	Catalogue Number		
	Subplate Mounting	Panel Mount Vertical Bezel	Panel Mount Horizontal Bezel
0.3 to 3 Seconds	PMT1D1B3	PMT1D2B3	PMT1D3B2
1 to 10 Seconds	PMT1E1B3	PMT1E2B3	PMT1E3B2
3 to 30 Seconds	PMT1F1B3	PMT1F2B3	PMT1F3B2
6 to 60 Seconds	PMT1G1B3	PMT1G2B3	PMT1G3B2
12 to 120 Seconds	PMT1H1B3	PMT1H2B3	PMT1H3B2
18 to 180 Seconds	PMT1J1B3	PMT1J2B3	PMT1J3B2

Diagram



Port Identification

- 6 - Control input signal.
- 1 - Air supply.
- 2 - Valve output.

Subplate (Required)

The PMT, whether panel or base mounted, requires a subplate for connecting fittings and air lines. Several types are available to suit connection needs. The subplate is supplied loose and unmounted, as a separate item.

Port Location	Catalogue Number	
	10-32 Ports	1/8 NPT
3 Bottom ports	SPA1A	SPA2A
6 Side ports	SPA1B	SPA2B
6 Side and 3 Bottom ports	SPA1C	SPA2C

Low Pressure Version

The PMT standard control input pressure range is 2 to 6.5 bar. For a low pressure pilot actuator (1 bar min.), change the “B” in the catalogue number to “A”.

Subplate Mounting Position

Standard timers are supplied with the subplate mounting position at the bottom of the timer. For mounting the subplate in another position, change the last digit of the catalog number as follows: 1 for top; 2 for right side; 3 for bottom; 4 for left side.

Power Connections

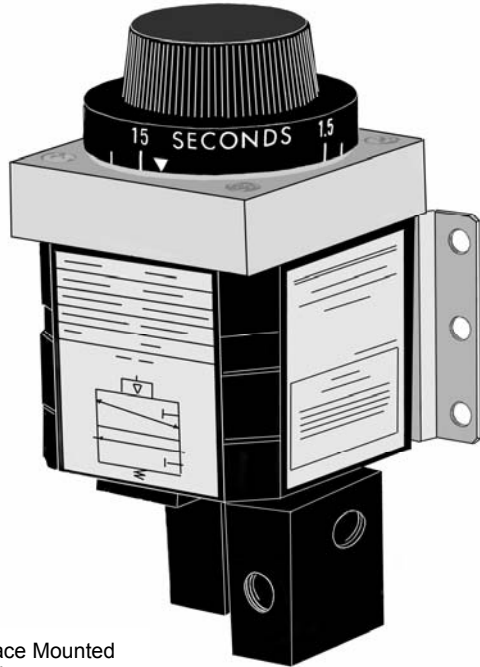
For installations requiring larger output valves, use the standard timer and connect a pneumatically operated single air piloted 3/2 or 5/2 valve of the size required to the timer output. Contact factory with size requirements.

Typical Circuits

See typical timing circuit diagrams at the end of the timer catalogue section for help in constructing pneumatic timer circuits.

Panel or Rear Mounted Pneumatic Timer

(Up to 60 Minutes)



Surface Mounted
PT Timer

The PT timer is an adjustable precise time delay pneumatic device. The timer is available with an on delay (NC), or an off delay (NO) output. The timer has 1/8 NPT ports.

The PT series timer combines a pneumatic timing mechanism with a floating spool valve assembly to provide a wide range of adjustable time control for fluid power systems. The timing assembly, which operates independently of the control pressure, is available in nine different ranges from one tenth of a second to 60 minutes, adjustable by means of a time-calibrated dial. Timing action is initiated by a motor diaphragm operated by a control pressure of from 0.5 to 10 bar.

The timer is equipped with a multi purpose 3/2 output valve allowing it to be used as normally open, normally closed or as a diverter.

The PT is designed for panel or surface mounting. Panel mounted versions include a 88mm square bezel while surface mounted units are equipped with a bracket for vertical mounting. If required, The PT can be specially calibrated for mounting horizontally.

Technical Specifications

Op. Pressure

0.5 to 10 bar.l

Connections:

1/8" NPT ports

Control Pressure:

0.5 to 10 bar

Media:

Filtered air or non-aggressive gas, non-lubricated.

Output Valve:

Flow @ 6.5 bar – 250 liters
Multi purpose 3/2 spool.

Dial Indicator:

Displays set time.

Timing Start:

On Delay - Application of pilot pressure to control port.
Off Delay - Removal of pilot pressure to control port.

Reset:

On Delay - Removal of pilot pressure from control port.
Off Delay - Application of pilot pressure to control port.

Reset Time:

60 ms @ 3.5 bar

Repeatability:

Up to 200 sec. - $\pm 5\%$.
Over 200 sec. - $\pm 10\%$.

Time Setting:

Via dial.
Accuracy $\pm 10\%$ of full scale.

Operation:

Timing cycle uses atmospheric pressure.

Materials:

Zamak housing, polycarbonate knob, aluminum valve with stainless spool. Diaphragms - Buna N

Operating Ambient:

-30°C to 70°C

Dimensions (mm):

Height – 134
Width – 63 -
Depth – 63

Mounting:

Surface or panel mounted.

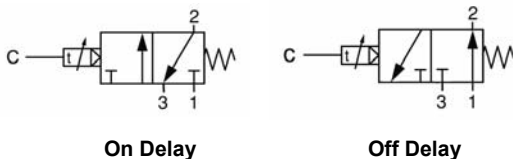
Drilling Plan (panel mount):

81 dia. hole.

Selection Chart

Timing Range	Catalogue Number			
	Standard Vertical Surface Mount		Panel Mounted	
	On Delay	Off Delay	On Delay	Off Delay
0.1 to 1 Second	PT31A	PT41A	PT35A	PT45A
0.5 to 5 Seconds	PT31B	PT41B	PT35B	PT45B
1.5 to 15 Seconds	PT31C	PT41C	PT35C	PT45C
5 to 50 Seconds	PT31D	PT41D	PT35D	PT45D
20 to 200 Seconds	PT31E	PT41E	PT35E	PT45E
1 to 300 Seconds	PT31K	PT41K	PT35K	PT45K
1 to 10 Minutes	PT31F	PT41F	PT35F	PT45F
3 to 30 Minutes	PT31H	PT41H	PT35H	PT45H
6 to 60 Minutes	PT31I	PT41I	PT35I	PT45I

Diagrams



Port Identification

- Port C - Control input signal
- 1 - System air supply
- 2 - Valve output
- 3 - Exhaust

On Delay Timer Operation

Pilot pressure is applied to the control port to start timing. After the timer reaches its set time, the valve switches over. *Removal of the pilot signal at any time resets the timer.*

Off Delay Timer Operation

Applying pilot pressure of at least 100ms in duration to the control port shifts the valve. *When the pilot pressure is removed, the timing sequence begins.* After the timer reaches its set time, the valve switches off. Re-applying the pilot pressure resets the timer and valve.

Options

Surface mounted units are calibrated for mounting in the vertical position. If horizontal mounting is required, add suffix "Y1" to the catalogue number. For a stainless steel fitting mounted on the pilot port add suffix "SS". To include a Dial Stop set at the factory (which prevents settings above or below a given number) add suffix "DS" and specify setting. For a Tamper Proof Cover add suffix "TP" to the catalogue number.

Power Connections

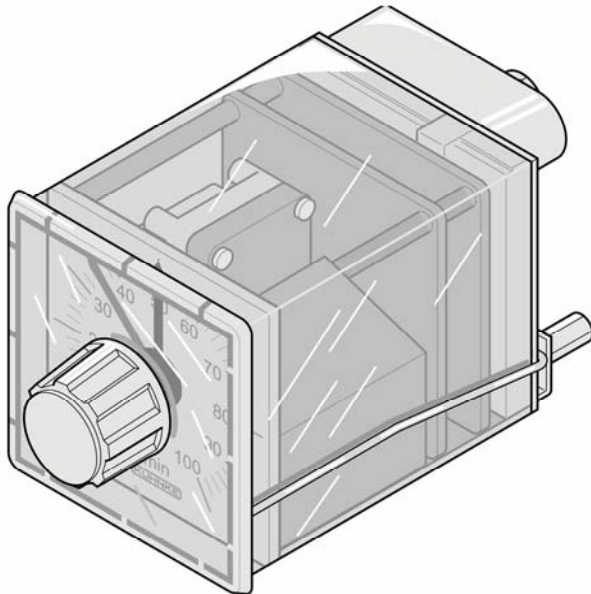
For installations requiring larger output valves, use the standard timer and connect a pneumatically operated single air piloted 3/2or 5/2 valve of the size required to the timer output. Contact factory with size requirements.

Typical Circuits

See typical timing circuit diagrams at the end of the timer catalogue section for help in constructing pneumatic timer circuits.

Panel Mounted Pneumatic Timer

(Up to 100 Hours)



The 54 Series timer is a totally pneumatic device with +/- 1% repeatability. Timing is fully adjustable throughout the timing range by a knob on the front dial face. The standard timer is equipped with a special 5/2 valve which provides for on or off delay timing (depending on plumbing connections). The front dial displays set time and the time remaining in the cycle.

The operation of the timer depends on the input of a separate control signal. The control signal drives a regulated air motor and gear chain to provide accurate timing regardless of control air pressure fluctuation. The timer resets automatically (approx. 200ms) after removal of control pressure signal.

A special version of the timer includes a rotor stop option which allows for an external valve to be added to permit a "count down on hold" function.

The 54 Series timer is self-contained in a panel mounted lexan case with a front timing adjustment knob. Connections are made at the rear of the timer. Spring clips are used to panel mount the unit.

Technical Specifications

Op. Pressure:

0-10 bar

Control Pressure:

1.5 to 10 bar
non-lubricated air

Output Valve:

5/2
Flow – 200 liters @ 6.5 bar
Orifice size - 2mm

Connection:

M5 ports

Media:

Filtered air or gas.
Non-lubricated.

Indicators:

Displays set time and time remaining before valve actuation.

Time Setting:

Via front dial knob. Adjustable throughout timing range

Accuracy of Setting:

± 2%

Repeatability:

± 1% of end scale value.

Operation:

Independent regulated air motor. Air consumption 10 l/m
Output air piloted 5 way valve.

Reset:

Automatic - by removal of control pressure.

Reset Time:

200 ms.

Timing Sequence:

On delay or off delay depending on valve connections.

Operating Ambient:

0°C to 60°C

Materials:

Lexan case, cast aluminum rear housing, nylon, brass, and stainless alloy mechanism.

Dimensions (mm):

Faceplate –72 square Behind panel –112 D x 66 H x 66 W.

Panel Cutout:

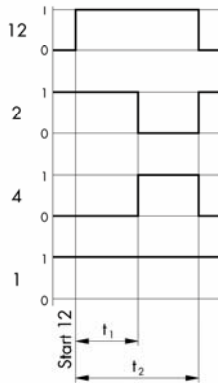
66mm square

Mounting:

Spring clips.

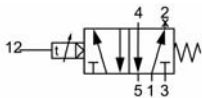
Selection Chart

Timing Sequence

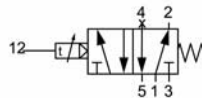


t_1 = Selected time delay. t_2 = Total duration of cycle.

Diagrams



On Delay
Blocked Port 2



Off Delay
Blocked Port 4

Timer output valve is 5/2, with M5 connections. Valves are supplied from factory blocked with a cap nut (port 4) for 3/2 *off delay*. For *on delay*, move cap nut to port 2. For full 5/2 operation remove nut.

Port Identification

Port 12 - Control input signal (on timer body).

Valve -

- 1 - System air supply
- 2 - Valve output "off delay connection"
- 3 - Exhaust for port 2
- 4 - Valve output "on delay connection"
- 5 - Exhaust for port 4

Replacement Parts

Control port input filter **72754500-00**
Output valve **54530**

Timing Range	Catalogue Number	
	Standard Timer	With Rotor Stop Option
0.3 to 10 Seconds	54021	54050
3 to 100 Seconds	54022	54051
0.3 to 10 Minutes	54023	54052
3 to 100 Minutes	54024	54053
0.3 to 10 Hours	54025	54054
3 to 100 Hours	54026	54055

Rotor Stop Option (Countdown on Hold)

A rotor stop option is available to override the timing action or to hold the timer valve in its switched position after the timer has completed its cycle, and signal pressure is removed. Option provides 2 additional rear ports connected via tube, which allows valves or other logic devices to be spliced into the internal circuit between the pilot signal regulator and rotor assembly.

For holding timer valve in its switched position or to place "timing on hold", an external 3/2 valve (NO) can be used to block the flow to the air motor (connected between rotor stop ports 1-2). If timing on hold is desired, the pilot signal must remain on throughout the entire cycle.

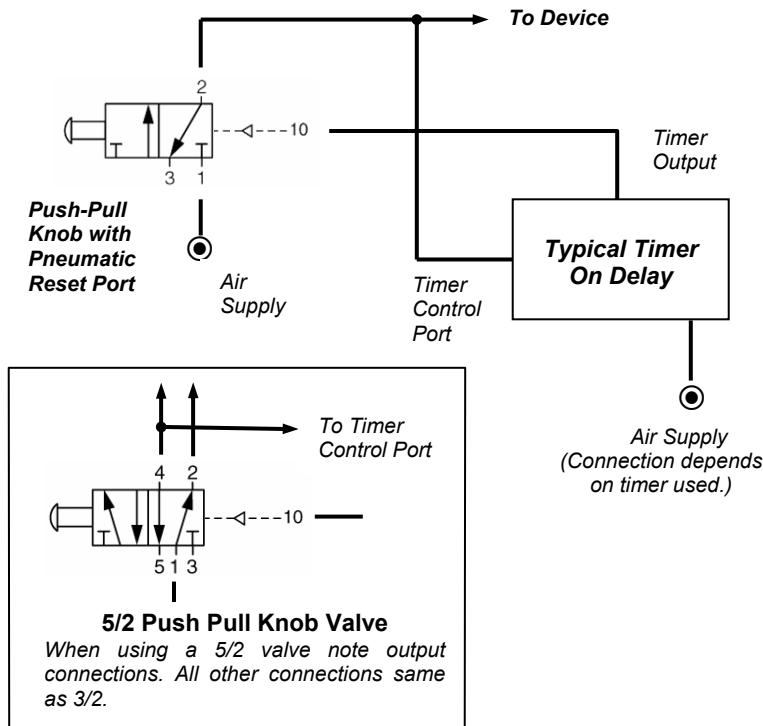
Power Connections

For installations requiring larger valves, use the standard timer and connect a pneumatically operated single air piloted 3/2 or 5/2 valve of the size required to the timer output. Contact factory with size requirements.

Typical Circuits

See typical timing circuit diagrams at the end of the timer catalogue section for help in constructing pneumatic timer circuits.

Timing Using a Manual Push-Pull Valve



Push-Pull valve can be used to start and stop system manually while providing timing to the circuit. A 5/2 valve can also be used when operating a double acting cylinder, or for alternating outputs.

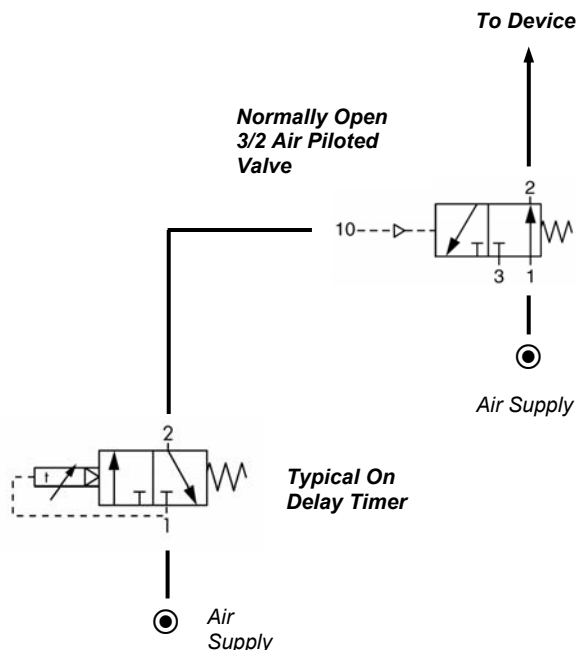
Operation

Pushing in knob starts air flowing to device and to timer. When the timer reaches set time, it sends a signal to the reset port of the push-pull valve shutting down the air output. To stop the process, pull the knob out, shutting off the air and resetting the timer.

Typical Item Selection

Any on delay timer (Consider length of time required and mounting preference).
Push-Pull Valve- Cat. nos. 76022-27-22 (3/2, 1/8 ports), 76023-27-42 (5 way, 1/8) or 76043-27-42 (5/2, 1/4).
Alternative- Lever operated valve, pneumatic reset, contact factory for information.

Converting an On Delay timer output to an Off Delay output



On delay timer signals can be converted to an off delay signal with the use of an interposing normally open 3/2 air piloted valve.

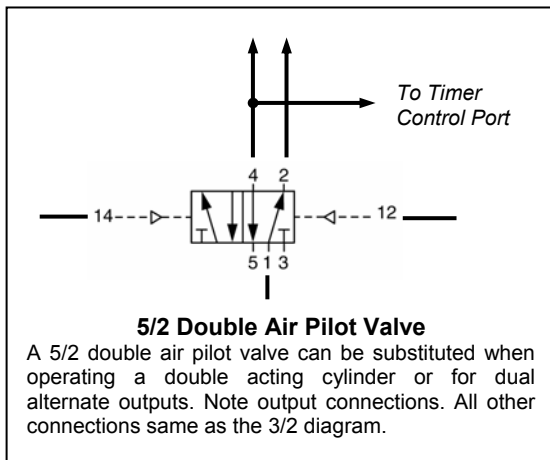
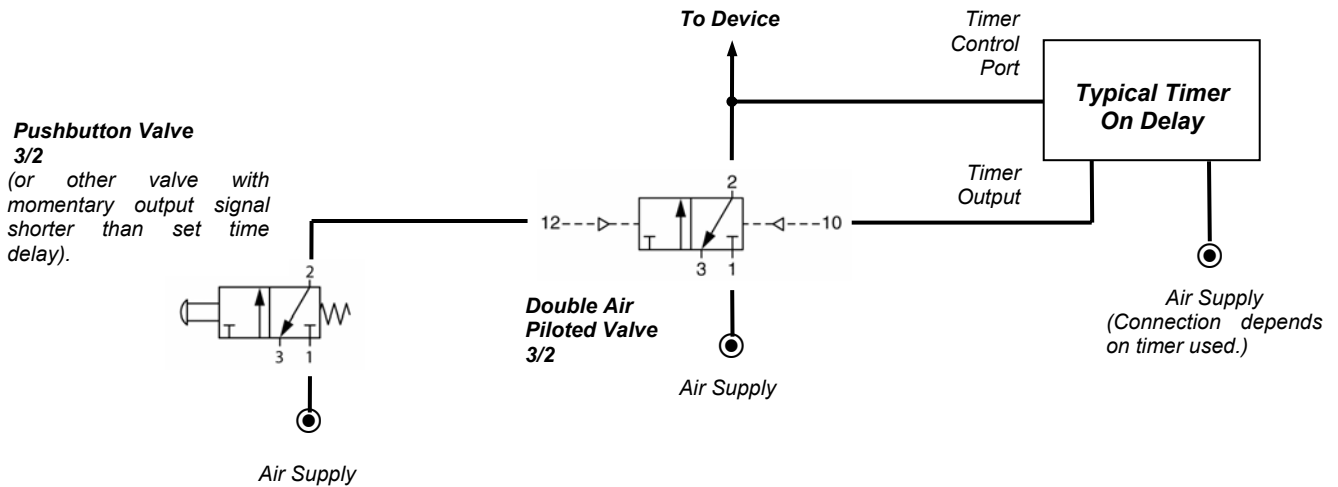
Operation

Air pressure is applied to the timer and to the operating device through the 3/2 piloted valve. When the timer reaches set time, it's output switches the air piloted valve shutting off the air to the device. Removing the air signal from the timer resets the air piloted valve and air flows again to the device.

Typical Item Selection

Any on delay timer (Consider length of time required and mounting preference).
3/2 air piloted valve (NO) Cat. no. 76036-71-31 (1/8). For larger valves contact factory for information.

Timing Using a Momentary Start Signal



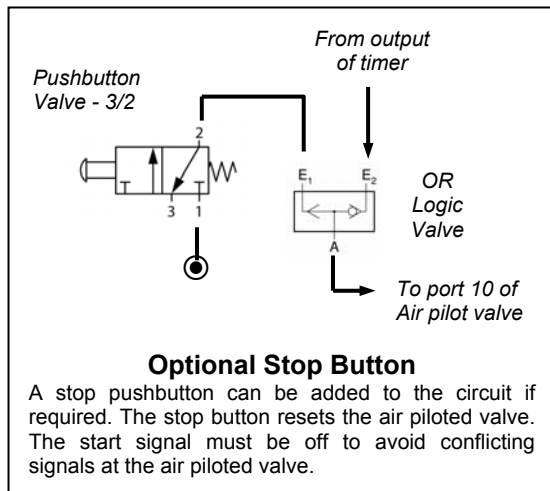
A timing sequence can be established from a momentary pressure signal using an interposing pneumatically operated valve. The most common signal used is from a pushbutton, but inputs from limit switches, foot pedals or other devices can be used to initiate timing. The size of the air piloted valve determines the air volume output.

Operation

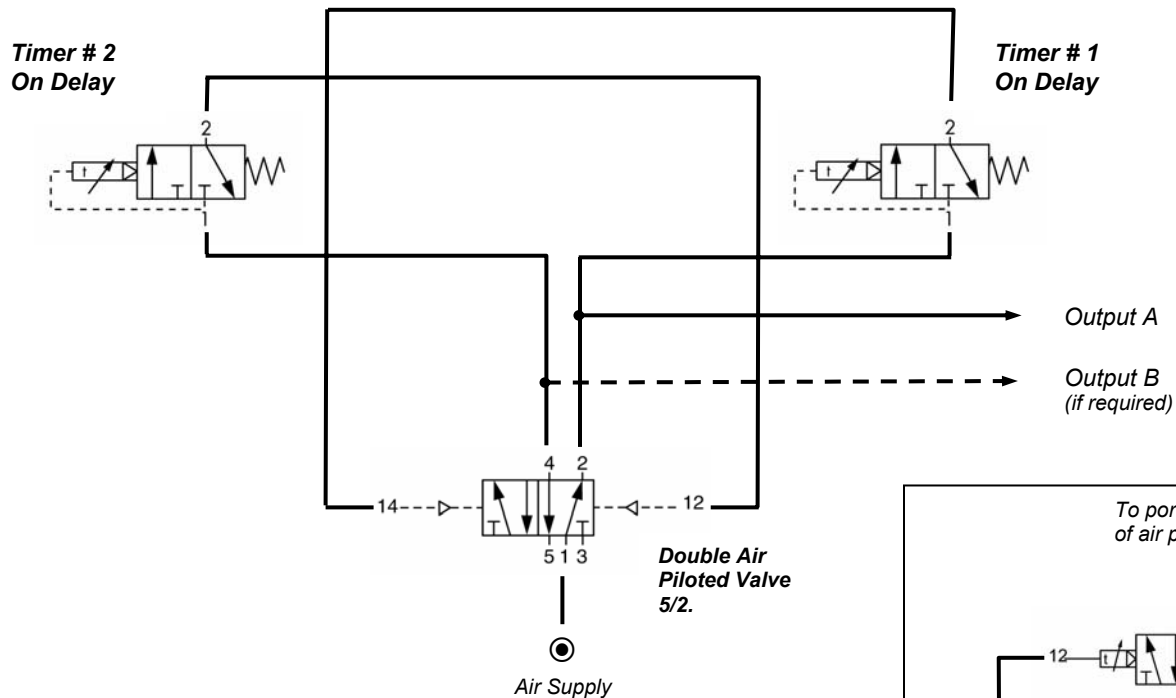
Pressing the pushbutton sends a signal to switch the air piloted valve on. The valve output is connected to the device to be controlled and to the timer control port. When the timer reaches it's set time it sends a signal back to the air piloted valve resetting it, turning off the output to the device. The timer resets.

Typical Item Selection

Any on delay timer (consider length of time required and mounting preference).
 Pushbutton 3/2 (choice of colour)- Cat. nos. 76022-62-21 (Red), -23 (Black) or -24 (Green).
 Double air piloted valve 3/2- Cat. no. 76022-71-22 (1/8 Ports).
 For larger sizes of double air piloted valves use a 5/2 valve and plug port 2 for 3/2 operation. Connect device and timer control to port 4 of 5/2 valve. Use Cat. nos. 76047-81-42 for 1/4 ports or 76067-81-42 for 1/2 ports.



Continuous Cycling Timer Circuit



Continuous cycling is accomplished by the use of 2 timers operating a double air piloted valve. Off and on times are dependent on the type and set time of timers used. The size of the air piloted valve determines the air volume output. The position of the air piloted valve determines the start up of the timing sequence. If the timing sequence must be restarted in a specific order, a reset circuit must be added at port 12 of the air piloted valve to move it to the start position prior to resuming operation.

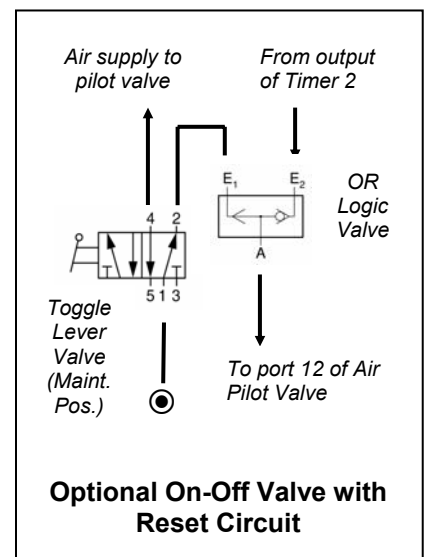
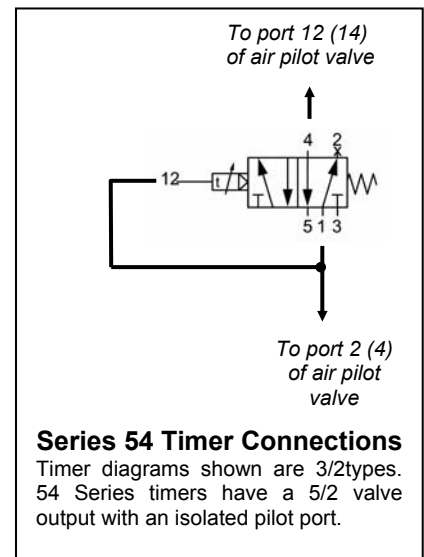
Operation

System pressure is turned on. Air flows through port 2 of the pilot valve to drive timer #1 and the device being controlled. When timer 1 reaches set time, it sends a signal to port 14 of the pilot valve, switching the air output to port 4, starting the timing sequence on timer #2 and shutting down timer 1 and the output to the device being controlled. When timer 2 reaches set time, a signal is sent to port 12 of the piloted valve resetting it and restarting the cycle.

Typical Item Selection

Timers- Any on delay timer. (Consider length of time required and mounting preference.)

Double Air Piloted Valve- Cat. nos. 81014 (M5 ports), 76027-71-42 (1/8), 76047-81-42 (1/4), or 76067-81-42 (1/2).



Continuous Cycling Timer Circuit Using PT Timers

Continuous cycling is accomplished by the use of 2 timers operating a spring return air piloted valve. Off and on times are dependent on the time range of the timers used. The size of the air piloted valve determines the air volume output.

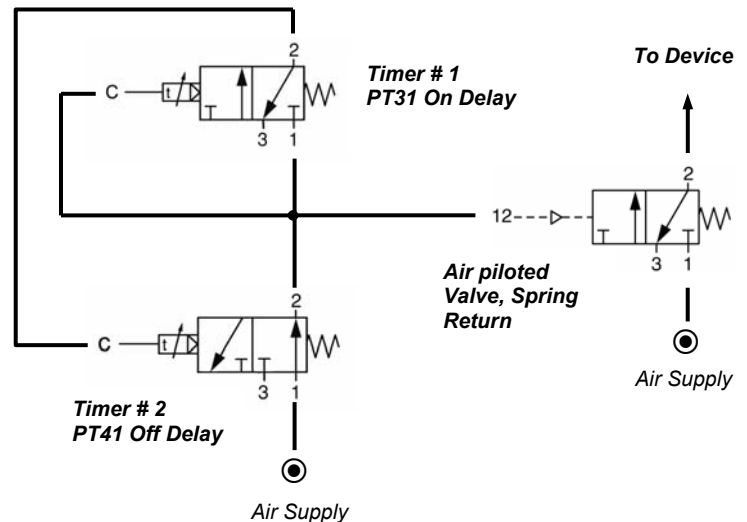
Operation

System pressure is turned on. Air flows through port 2 of Timer #2 to drive timer #1 and to operate the air pilot valve turning on air to the device being controlled. When timer 1 reaches set time, it sends a signal to port C of timer 2, shutting down the air supply to the air piloted valve and timer 1. This enables timer 2 to begin timing. When timer 2 reaches set time, it operates and the cycle is repeated. Removing the air supply resets the circuit to the start position.

Typical Item Selection

One On Delay PT timer and one Off Delay PT timer with the required time ranges.

Single air piloted, spring return valve, 3/2, cat. no. 76026-71-21 (1/8), 76046-71-21 (1/4), 76066-81-21 (1/2). For operating double acting cylinders use 5/3 valves.



Using a Momentary Start Signal with an Off Delay PT 41 or PT45 Timer

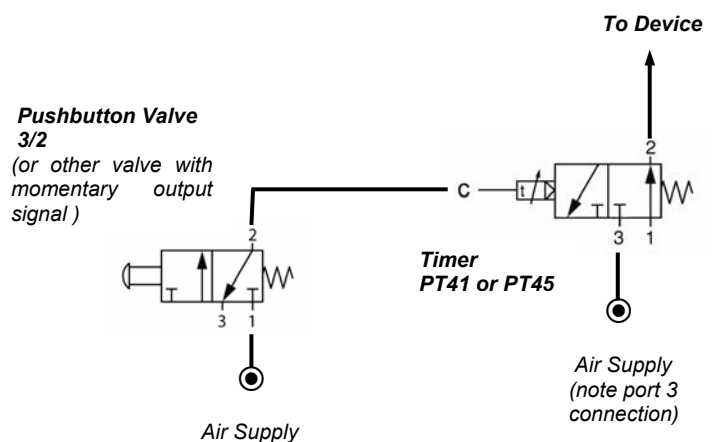
One shot timing can be initiated from a momentary air signal using a PT41 or PT45 off delay timer.

Operation

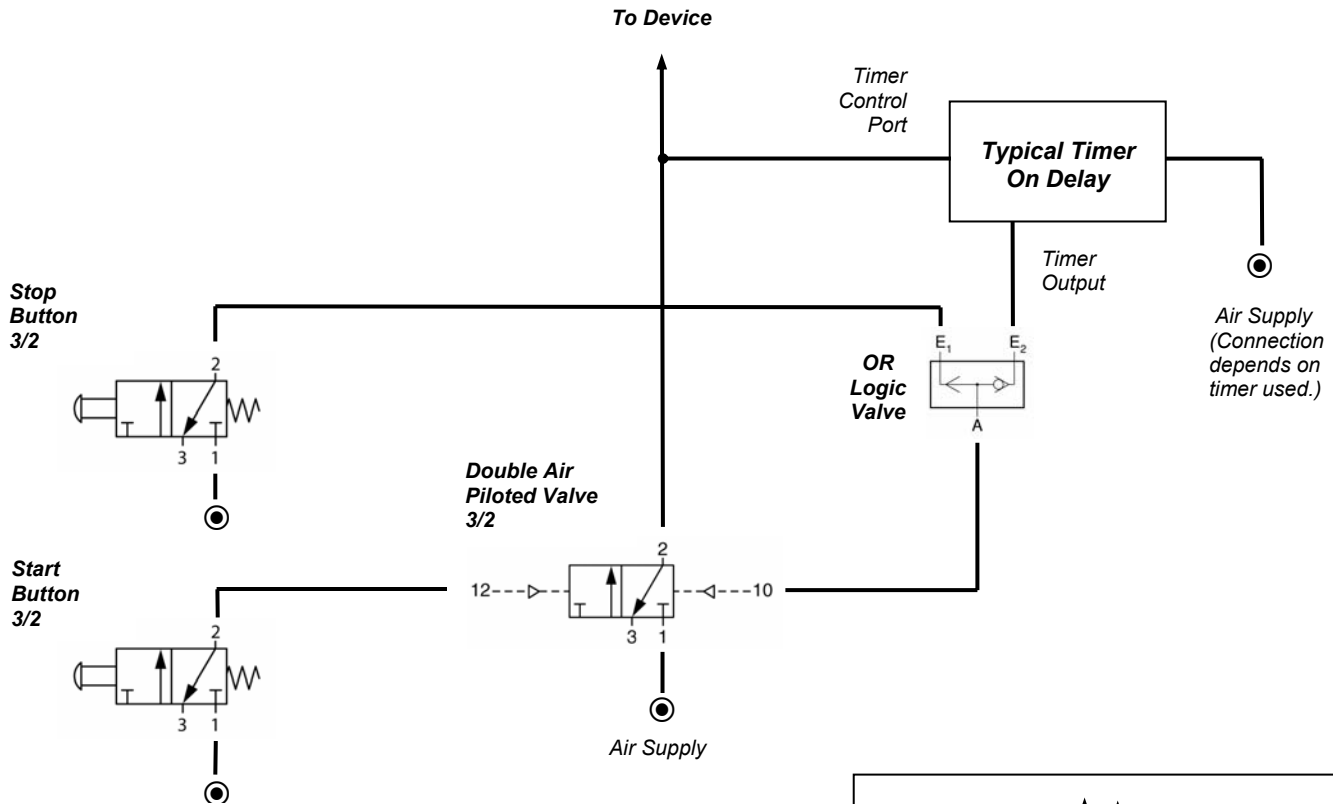
A momentary pilot pressure applied to the control port from a pushbutton or similar device switches the timer valve and provides an output. Releasing the button starts the timing cycle. When the set time is reached, the valve operates, shutting down the output to the device being controlled.

Typical Item Selection

Any PT41 or PT45 timer.
Pushbutton catalogue number 76022-62-21 (Red) or other valve with a momentary output signal.



Timing using Start-Stop Pushbuttons



Separate start-stop pushbuttons can be used in conjunction with a double air piloted valve and an “or” logic valve to control a timing circuit if required. A wide selection of types and colours of pushbuttons is available to meet design requirements. The size of the air piloted valve determines the air volume output.

Operation

Pressing the start pushbutton sends a signal to switch the air piloted valve on. The valve output is connected to the device to be controlled and to the timer control port. When the timer reaches its set time it sends a signal back to the air pilot valve resetting it, turning off the output to the device. To stop the timing (ie. emergency stop) press the stop button, which sends a signal via the “or” logic valve to reset the double air piloted valve.

Typical Item Selection

Any on delay timer (consider length of time required and mounting preference).

Pushbutton 3/2 (choice of colour)- Cat. nos. 76022-62-21 (Red), -23 (Black) or -24 (Green).

Double air piloted valve 3/2- Cat. no. 76022-71-22 (1/8 Ports).

For larger sizes of double air piloted valves use a 5/2 valve and plug port 2 for 3/2 operation. Connect device and timer control to port 4 of 5/2 valve. Use Cat. nos. 76047-81-42 for 1/4 ports or 76067-81-42 for 1/2 ports.

Logic valve-“OR” cat. no. 47003.

