

Pneumatic Mini Timer Instructions

For 51.020.03.00/51.020.30.00/51.020.33.00/51.020.34.00/51.021.03.00/51.021.30.00 + ATEX Variants

Smooth functionality and reliable timing can only be guaranteed if the instructions within this document are strictly followed.

The miniature pneumatic timer is an adjustable timing device that offers excellent repeat timing and setting accuracy, typically used as an ON delay or an OFF delay function to signal other valves or devices within purely pneumatic systems.

Setting the pneumatic timer is achieved by adjusting the front rotary knob to the desired set point; there are two vertical scales; one indicates the setting time and the other the time remaining in the cycle.

- **ON delay timers.** The timing sequence begins by applying compressed air to port 1. On reaching a preset value, port 2 connects to port 1. The output at port 2 remains on whilst air to port 1 is connected. Air removal from port 1 resets the preset timing value, and the output from port 2 disconnects from port 1.
- **OFF delay timers.** Port 2 to 1 is connected. The timing sequence begins by applying compressed air to port 12. On reaching a preset value, port 2 closes. The output at port 2 remains closed whilst air to port 12 is connected. Air removal from port 12 resets the preset timing value, and port 2 to 1 reconnects.

Installation & Mounting

Mini timers can be built into the front panel of equipment. Panel cut-out: 45mm (+0.6) x 22.2mm (+0.3) and secured in place with a fixing clip. Please ensure the panel cut-out is large enough that the timer is not placed under mechanical tension or strain when built in. Additionally, a panel frame, part number 1499512, provides a wider aperture giving a professional looking finish to panels. Panel frames are used individually or with protective covers. Din-rail mountings allow the timer to be mounted inside a panel for additional protection and also to prevent tampering.

Pneumatic Connections

Mini timers are provided with threaded M5 connections. Please ensure a tight seal is provided by fully inserting tubing and by tightening threads sufficiently providing a proper seal. We recommend the use of self-sealing fittings, this is a fitting that incorporates an NBR sealing ring. We do not recommend the use of thread sealing compounds. Due to the close proximity of ports we recommend a cylindrical shape fitting.

50010N-04-05 M5 to 4mm o/d tube
50010N-06-05 M5 to 6mm o/d tube



Timing Reset

Automatic reset by air removal. ON delay timers by removal of air to port 1. OFF delay timers by removal of air to port 12.

Environment

Not suitable for external or harsh environments. Protect from corrosion. General advice is to house within an enclosure or control panel with suitable protection rating or use a protective cover. See accessories.

Air Quality

Clean, dry and oil free air to instrument quality standards. Please note that at low operating/ambient temperatures air filters alone will not be sufficient. Air dryers are recommended to achieve low moisture dew point.

Exhaust

Compressed air will exhaust from this device as part of the operating sequence. This could be sufficient volume and pressure to create risk or introduce problems within an enclosure.

Safety & Warnings

Only competent qualified persons should install, mount, attach hoses, initially operate, maintain, test and disassemble this product. Never disconnect power lines or service the device when the system is powered. This product should only be used for its intended purpose and within the limits and conditions as described. When cleaning or servicing the product, to avoid electrostatic discharges, use a damp anti-static cloth.

Impulse Automation Limited
United Kingdom
Company Registration 665193

Pneumatic Mini Timer Instructions Continued

Technical Data

Pressure range:	2 to 6 bar
Pick-up pressure:	1.2 +/- 0.4 bar
Drop-out pressure:	0.3 +/- 0.2 bar
Reset time:	Min. 200 ms
Service Life:	5 million cycles
Vibration resistance:	30 m/s (10-500 Hz)
Shock resistance:	400 m/s (during 5 ms)
IP rating:	IP40 when connected. IP55 when using a polycarbonate transparent cover.
Temperature range:	0°C to +60°C
Medium temperature:	Maximum 30°C (compressed air temperature).
Display:	Digit roll
Housing:	Plastic material.

Product Selection

Order Code (No ATEX)	Order Code (+ ATEX)	Function & Time Range	Repeatability	Setting Accuracy
51.020.33.00	57.020.33.EX	ON delay - 0.2 to 3 seconds	+/- 0.1 s	+/- 0.3 s
51.020.03.00	57.020.03.EX	ON delay - 2 to 30 seconds	+/- 0.3 s	+/- 0.6 s
51.020.34.00	57.020.34.EX	ON delay - 8 to 120 seconds	+/- 1.2 s	+/- 3.0 s
51.020.30.00	57.020.30.EX	ON delay - 20 to 300 seconds	+/- 3.0 s	+/- 6.0 s
51.021.03.00	57.021.03.EX	OFF delay - 2 to 30 seconds	+/- 0.3 s	+/- 0.6 s
51.021.30.00	57.021.30.EX	OFF delay - 20 to 300 seconds	+/- 3.0 s	+/- 6.0 s

Accessories

Order Code	Description	Comments
51.031.00.00	Din-rail mounting adaptor with M5 ports	Not compatible with OFF delay timers
51.031.00.01	Din-rail mounting adaptor with 4mm push-in ports	Not compatible with OFF delay timers
1499512	Panel frame 52mm x 52mm cut-out	Provided with 2 x M4 screws
1405613	Hinged cover with rotary knob	Select 1499512 with this accessory
1405614	Hinged cover with lock and key	Select 1499512 with this accessory

ATEX

As well as standard timing devices which are intrinsically safe, we offer ATEX fully certified, CE-marked pneumatic timing products that comply with the ATEX directives for use within category M2 and group II, zones 1 and 21. See product selection.

ATEX timing products (57.020.03.EX, 57.020.30.EX, 57.020.33.EX, 57.020.34.EX, 57.021.03.EX, 57.021.30.EX) conform to the following standards:

Standard	Classification	Issued
EN ISO 80079-36	Ex II 2G Ex h IIB T4 Gb (0°C ≤ Ta ≤ +60°C)	2016
EN ISO 80079-37	Ex II 2D Ex h IIIB T120°C Db (0°C ≤ Ta ≤ +60°C)	
	Ex I M2 Ex h I Mb (0°C < Ta < 60°C)	

Our declaration of conformity can be downloaded from <https://www.impulseautomation.co.uk/downloads>

Warning: ATEX products should never be used in Zone 0 or Zone 20, as defined in IEC 60079-10-1:2015 and IEC 60079-10-2:2015.

The system builder is responsible for ensuring that the final system meets any hazardous zone, EX or ATEX requirements.

Disclaimer

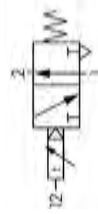
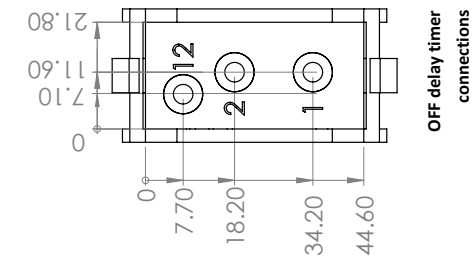
Impulse Automation Limited accepts no responsibility for the application of this product.

email: sales@impulseautomation.co.uk
website: www.impulseautomation.co.uk

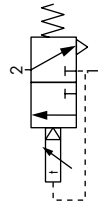
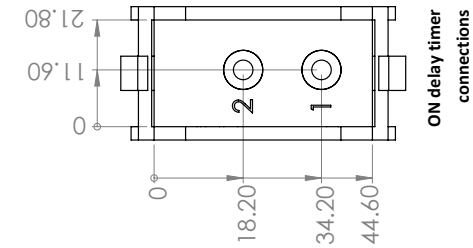
Instructions

Pneumatic Mini Timer

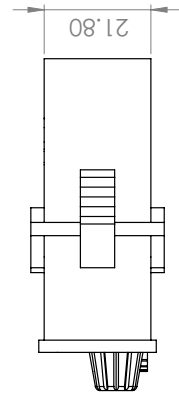
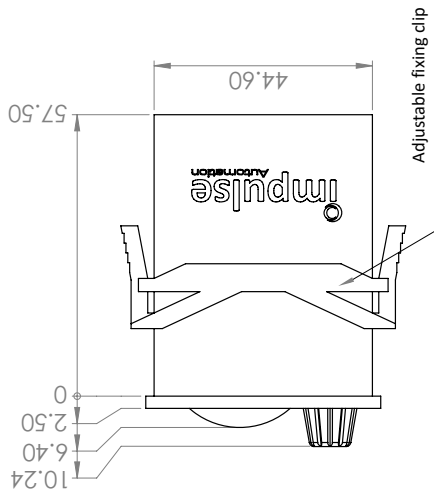
+ ATEX Models



The OFF is delayed. The output valve is positive while timing and negative on timeout. Normally open timing.



The ON is delayed. The output valve is negative while timing and positive on timeout. Normally closed timing.



Mini timer display scaling

- 0.2 to 3 seconds X 0.1
- 2 to 30 seconds None
- 8 to 120 seconds X 10
- 20 to 300 seconds X 10



The information shown within these pages is for guidance purposes only. No liability is accepted for errors or omissions. The designer or user is solely responsible for safely and correctly using the parts, assemblies or equipment described. Please always refer to our website for latest updated instruction information. This instruction manual is not available in other languages