

# Pneumatic Preset Counter Instructions

For 50.700/50.750/50.685/50.680/50.690/50.695 + ATEX Variants

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

Pneumatic preset counters register pneumatic air pulses on a mechanical display. A pneumatic output on reaching a preset value signals other devices within a pneumatic system to stop a process at the desired set-point.

Pneumatic preset counters are used mainly for industrial machine applications where batch counting or ratio counting is an essential requirement of a process; they are also commonly used in areas where no electrical power is permitted or considered dangerous.

**Adding versions** have a two-line display; the original preset and process values are shown. The counter starts from zero and counts up to a preset value then emits an output. **Setting the display** - Push down on the white lever and increment the display by pushing the adjacent black buttons to set the preset value.

**Subtracting versions** have a single-line display. A preset value reduces until it reaches zero, and the counter then emits an output. **Setting the display** - Push the reset button and increment the display by pushing the adjacent black buttons to set the preset value.

## Installation & Mounting

Pre-set counters are intended to be built into the front panel of equipment. Panel cut-out: 52mm x 52mm. Distance between holes: 63mm and fastened with two countersunk M4 screws provided. Please ensure that the panel cut-out is large enough that the counter is not placed under mechanical tension or strain when built in.

## Pneumatic Connections

Pre-set counters are provided with threaded M5 connections or 4mm push-in rapid fit connections. Input Z (input for count pulses), input Y (input for the reset pulse), input P (mains pressure input) and output A (A connects to P on reaching the pre-set value). 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.

## Reset

On reaching a pre-set value, ports A and P are connected. To close pressure to port A and reset the device, press the front reset button or provide a pulse signal to port Y. Pressure must be removed from the count input port Z completely before resetting to avoid jamming, miscounting or irreparable damage to the device. **Note:** Output A cannot be used to reset the device at reset port Y.

## 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 Preset Counter Instructions Continued

## Technical Data

Pressure range:	2 to 8 bar / 2 to 6 bar for ATEX versions.
Count frequency:	5Hz (non-pulse period must drop to 0.15 bar for a minimum of 12ms).
Count pulse length:	Input port Z - 8 ms minimum. No pressure on port Y.
Count interval length:	12 ms minimum before the next count pulse.
Reset pulse length:	Input port Y - 180 ms minimum. No pressure on port Z.
Reset interval:	50 ms before next count pulse input.
Reset frequency:	One reset per two seconds maximum.
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).
Mechanical life:	30 x 10 <sup>6</sup>
Display:	3 or 5 digits (single or dual line display). (W) 4mm or 3mm x (H) 4mm respectively, white on black background.
Reset:	Manual button reset with pneumatic reset to port Y.
Housing:	Plastic material.

## Product Selection

Order Code (No ATEX)	Order Code (+ ATEX)	Display Type	Connections
50.700	-	3 digit adding - dual line display	4mm push-in
50.750	-	5 digit adding - dual line display	4mm push-in
50.680	57.680.EX	5 digit adding - dual line display	M5 threaded
50.685	57.685.EX	3 digit subtracting - single line display	M5 threaded
50.690	57.690.EX	5 digit subtracting - single line display	M5 threaded
50.695	57.695.EX	3 digit adding - dual line display	M5 threaded

## Accessories

Order Code	Description
1405613	Hinged cover with rotary knob
1405614	Hinged cover with lock and key
1405404	Flexible Vestolit cover with silver frame
1405587	Flexible Vestolit cover with black frame

## ATEX

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

ATEX counting products (57.680.EX, 57.685.EX, 57.690.EX, 50.695.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 IIB T130°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.

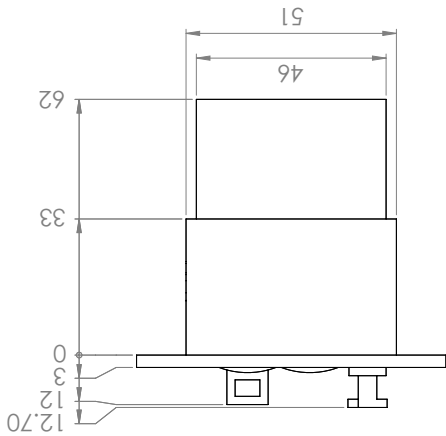
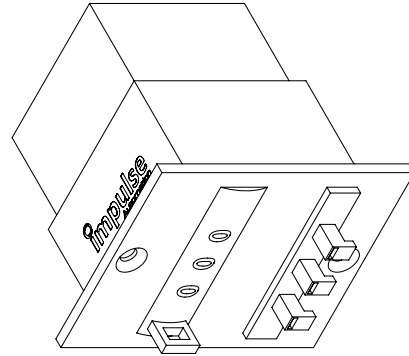
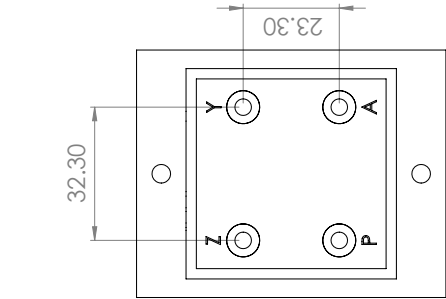
**email: sales@impulseautomation.co.uk**  
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# Instructions

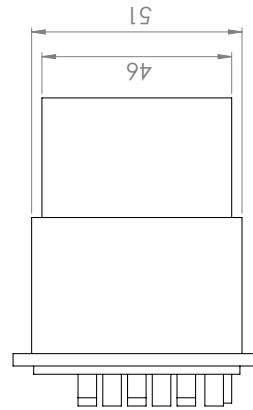
## Pneumatic Preset Counter

### + ATEX Models

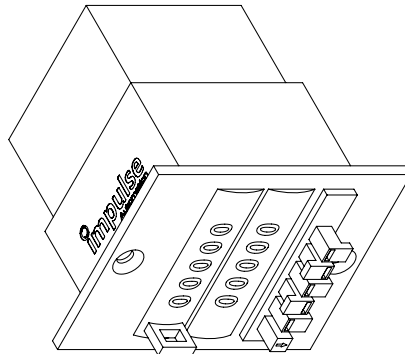
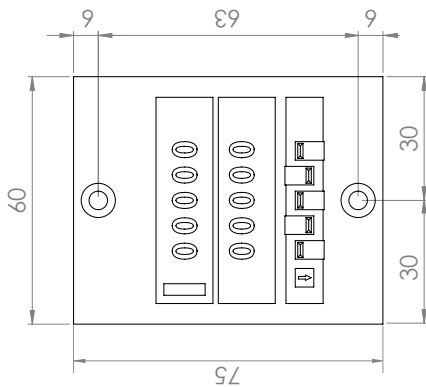
Pneumatic Preset Counter Drawings



Port Z = Count pulse input  
 Port Y = Pneumatic reset  
 Port P = Mains air pressure input  
 Port A = Output signal



3 digit counter digit size (W) 4mm x (H) 4mm.  
 5 digit counter digit size (W) 3mm x (H) 4mm.



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