

**PA105**  
**&**  
**PA106**  
**Pre-Amplifier**

**BY**



---

## TABLE OF CONTENTS

ITEM	PAGE
1 CONTACT INFORMATION: .....	3
2 WAVER: .....	3
3 SAFETY: .....	3
3.1 Handle the product with care: .....	3
3.2 Change Intervals: .....	3
3.3 Product Failure: .....	3
3.4 Back-up system: .....	3
4 CAUTION: .....	4
5 THE PURPOSE OF THIS MANUAL:.....	4
6 WHO SHOULD READ THIS MANUAL: .....	4
7 WHERE TO KEEP THIS MANUAL: .....	4
8 PRODUCT DESCRIPTION: .....	4
8.1 PA105-Pre-Amplifier: .....	4
8.2 PA106-Pre-Amplifier: .....	5
9 Connection Diagram: .....	5
9.1 Terminal Connection diagram for PA105 & PA106: .....	5
9.2 Connecting the PA105 Pre-Amplifier: .....	6
9.3 Connecting the PA106 Pre-Amplifier: .....	7
10 Other references: .....	8
11 Warranty: .....	8

---

## 1 CONTACT INFORMATION:

If you need further help or assistance with your product, you may contact **ProcessAutomatic** by the following means:

**Telephone:** +46 (0)156 10480  
**E-Mail:** [pasweden@processautomatic.com](mailto:pasweden@processautomatic.com)  
**Postal address:** P.O. Box 128  
610 70 Vagnhärad  
SWEDEN.

## 2 WAVER:

For printing errors, please contact your nearest **ProcessAutomatic** reseller or our head office. Please note, **ProcessAutomatic** will not assume any responsibility for printing errors (E&OE). Please make sure that you always have the latest product manual available. The latest manual can always be downloaded directly from Processautomatic's web site [www.processautomatic.com](http://www.processautomatic.com) or obtained thru request by contacting **ProcessAutomatic** or your nearest **ProcessAutomatic** Reseller.

## 3 SAFETY:

This product should only be used by persons familiar with the product or persons that have read and understood this manual in full. Any persons not familiar with this product should refrain from any use until they have read and understood the manual in its entirety.

It is imperative for safety reasons to correctly follow the connection diagram. The connecting wires are polarity dependent. Only use recommended supply voltage. By mixing the polarity or by exceeding recommended supply voltage, the product will short circuit and cause product failure. Exceeding recommended supply voltage can cause bodily harm or death.

### 3.1 Handle the product with care:

Dropping the product or other miss use causing impact on the PA105 or PA106 can cause product failure.

### 3.2 Change Intervals:

It is recommended to replace the PA105 & PA106 Pre-Amplifiers every 5 years. They include parts which deteriorate over time. Component failure will cause product failure.

### 3.3 Product Failure:

Product failure means that the product (PA105 or PA106 Pre-Amplifier) has ceased to function properly. If this product does not function properly – if used with a pick-up sensor and flow meter, it can lead to the system not registering actual flow.

### 3.4 Back-up system:

Always have an overfilling back-up system activated to avoid injuries in case of product failure.

---

## 4 CAUTION:

Misuse of this product or use outside of what is recommended in this manual, may result in personal injury as well as damage to the product and other system installations.

Reference to safe use and handling of this product will be made throughout this manual.

## 5 THE PURPOSE OF THIS MANUAL:

This manual is designed to guide any and all users of Process Automatic PA105 & 106 Pre-Amplifier to safe and proper handling. It is only thru safe and proper handling that the end user will get the most out of this product.

The goal of this manual is to inform the user about the product, how it works and of how to use it. It is important that the end user is well accustomed to the product, as such, should there be a need for any additional information, please contact your nearest Processautomatic reseller or our head office to forward your requirements.

## 6 WHO SHOULD READ THIS MANUAL:

All persons intending to or that are intended to use a PA105 or PA106 should read this manual in its entirety. If after reading, any aspect of the use of EZ-2US is unclear or not understood, then please contact your nearest Processautomatic reseller or our head office for further support. No person should use these products if they are not fully aware of and fully understand how they work.

## 7 WHERE TO KEEP THIS MANUAL:

This manual should be kept near or at the location of the product. It should be readily accessible to any and all users of this product. Laminated versions of this manual are able to be purchased directly from Processautomatic or any of its resellers. Digital copies are readily available for downloading from Processautomatic web site [www.processautomatic.com](http://www.processautomatic.com).

**NOTE:** It is recommended to file this manual at a location readily accessible by personnel using or intended to use the PA105 or PA106 Pre-Amplifier. Paper copies should be kept dry and away from all forms of moisture, chemicals, corrosive substances or sharp objects.

## 8 PRODUCT DESCRIPTION:

### 8.1 PA105-Pre-Amplifier:

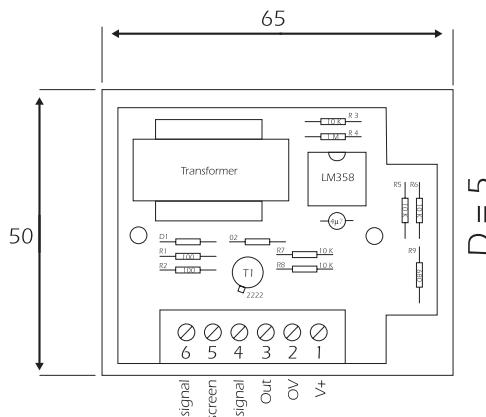
The PA105 Pre-Amplifier has an open collector with a max load of 500mA. This is appropriate for use with sink inputs. This means that the PA105 Pre-Amplifier has a continuous output equal to the supply voltage. If the supply voltage is 15 volts, then the PA105 will continuously provide 15 volts – until a pulse comes from the pick-up sensor, closing this output signal.

## 8.2 PA106-Pre-Amplifier:

The PA106 Pre-Amplifier has a source output, where the amplitude is equal to the supply voltage. The maximum current load is 20mA. These are appropriate for source inputs or pulse inputs. In opposite to the PA105, the out-put signal is always closed – until a signal from the pick-up sensor comes. The output signal will then have the same amplitude as the supply voltage. So, if supplied with 12 volts, the amplitude of the output signal will be 12 volts.

## 9 Connection Diagram:

### 9.1 Terminal Connection diagram for PA105 & PA106:



When purchased as a silicon filled version – then the signal and supply cables will already have been connected to the terminal. However – if purchased without a silicon filled version

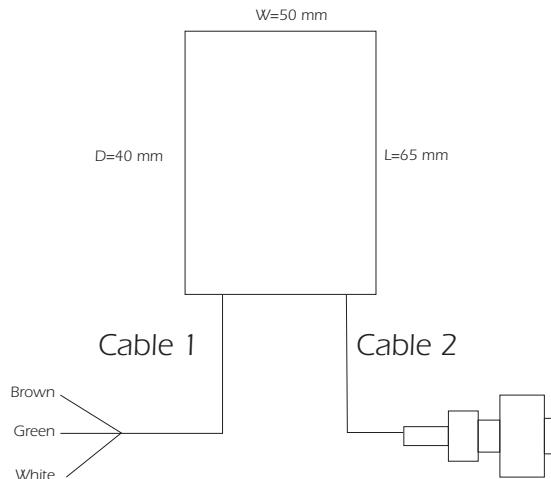
– and the terminal connection is intended to be performed by the customer – it is very important to connect the signal & supply cables as instructed & illustrated.

1. Connect the signal cables copper wires to terminals 4 & 6.
2. Connect the signal cable screen to terminal 5.
3. Connect the output signal cable copper wire to terminal 3.
4. Connect the (-) negative supply cables copper wire to terminal 2.
5. Connect the (+) positive supply cables copper wire to terminal 1.

**NOTE:** The diagram illustrates a PA105 Pre-Amplifier – However, the terminal on the PA105 Pre-Amplifier & the PA106 Pre-Amplifier are identical.

**NOTE:** Failure to connect as illustrated and instructed can result in short circuit – or cause loss of signal / loss of indication of actual flow.

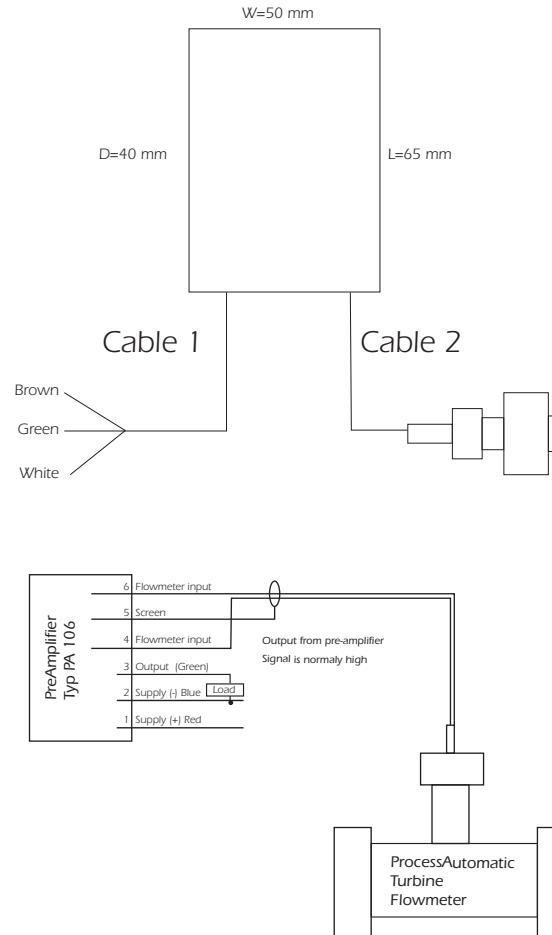
## 9.2 Connecting the PA105 Pre-Amplifier:



### Cable colour codes according to DIN 47100.

- Brown cable: Supply voltage, V+ = 5-30V
- Green cable: Output open collector, max load 500mA
- White Cable: 0V, Supply and signal.
- Temperature Range: - 40 to +70C
- Enclosure Protection: IP65 standard
- Enclosure Protection: IP66 & IP68 Potted.

## 9.3 Connecting the PA106 Pre-Amplifier:



### Cable colour codes according to DIN 47100.

- Brown cable: Supply voltage, V+ = 5-30V
- Green cable: Output source, amplitude = V+, max load 20mA
- White Cable: 0V, Supply and signal.
- Temperature Range: - 40 to +70C
- Enclosure Protection: IP65 standard
- Enclosure Protection (optional): IP66 & IP68 Potted.

## 10 Other references:

Please also refer to the Product data sheet. Both the product data sheet and the latest version of this manual can always be found for download on the Processautomatic web site at [www.processautomatic.com](http://www.processautomatic.com)

## 11 Warranty:

This product has a 1-year (one year) factory warranty. The warranty only covers the product being used under the recommendations in this manual. Any use outside of this manual will not be covered by warranty.

For warranty issues, Processautomatic reserves the right to have the product sent in for warranty evaluation.

Buyer shall have fifteen (15) days upon receipt to inspect and test the Products ("Inspection Period"). If the buyer determines any unit of Products defective, the buyer shall promptly notify Processautomatic of such defects. Defective Products may be returned for re-test, evaluation and examination subject to Processautomatic's Returned Material Authorization ("RMA") procedure; provided, that such written notification and request for an RMA number must be received by Processautomatic during the Inspection Period. Returns must be prepaid by the buyer. When requesting a return authorization, the buyer must supply the buyers purchase order number and Processautomatic's invoice number. Product description must include product serial number.

Exclusion. Processautomatic will inspect all Products returned pursuant to the foregoing RMA procedures, and Processautomatic will not replace products where the defect is due to misuse, neglect, alteration or improper storage.