INSTALLATION GUIDE

Analog Encoder Series M36 and M58

For further information please see the data sheet at www.waycon.biz/products/encoders/

INTRODUCTION

WayCon Positionsmesstechnik GmbH would like to thank you for the trust you have placed in us and our products. This manual will make you familiar with the installation and operation of our analog encoders. Please read this manual carefully before initial operation!

Unpacking and checking:
Carefully lift the device out of the box by grabbing the housing. After unpacking the device, check it for any visible damage as a result of rough handling during the shipment. Check the delivery for completeness.
If necessary consult the transportation company, or contact WayCon directly for further assistance.

MOUNTING OF THE SENSOR

- It is not permissible to dismantle the encoder entirely or in part or to modify it.
- Do not alter the shaft (by grinding, sawing, drilling, etc.), otherwise the accuracy of the encoder and the dependability of bearing and gasket will suffer.
- Never align the instrument with a hammer.
- It is imperative to avoid impact loads.
- Radial and axial load capacity as stated in the data sheet have to be observed under any circumstances.
- Do not connect encoder and drive rigidly to one another at shafts and flanges. Always use a coupling (between drive shaft and encoder shaft, or between hollow-shaft encoder flange and drive flange).

ELECTRICAL SAFETY

- To prevent short-circuits, neatly insulate the ends of all strands which are not required.
- Plug in or pull out mating connector at the encoder only when encoder is deenergized.
- Make certain that the operating voltage is correct and the max. permissible output current is not exceeded (see data sheet).
- The operating voltage for encoder and succeeding device must be turned on and off together.

In order to obtain CE-Conformity, EMC installation conformity should be observed.

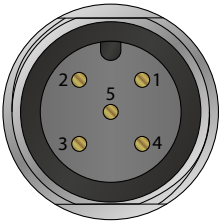
- The protection earth should be put with low impedance on both face and back of the encoder and the transmission end.
- In case of earth loop problems, the protection earth of the encoder side has to be removed. On this occasion, the encoder should be placed electrically isolated opposite the actuation.
- The encoder lines should run separately to cables with high noise levels.
- Consumer with high disturbance level, e.g. frequency converters, solenoid valves, contactors etc. should not be connected to the same voltage supply. Otherwise, a suitable voltage filtering has to be installed.

ELECTRICAL CONNECTION

Function	Connector output	Cable output	Connection cable K5P
Signal	1	GN	BN
+V	2	BN	WH
GND	3	WH	BU
Set 2 [1)]	4	PK	BK
Set 1 [1)]	5	GY	GY

[1)] scalable version only.
Set 1: input for 1. teach point
Set 2: input for 2. teach point

Connector output M12, male



STATUS LED

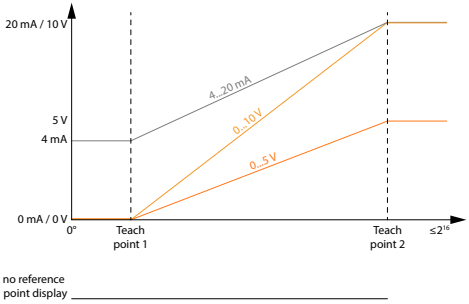
Mode	Display	Meaning	Error cause	Possible solution
operation mode	No LED illuminated	Encoder offline	Incorrect power supply	Check wiring
	LED flashes green (250 ms)	Service mode	Encoder in service mode	
	LED glows green	Normal operation		
	LED flashes alternately red and green (250 ms)	System error	Internal system error	
	LED flashes alternately red and green (500 ms)	Wire break (only for current output)	Load at the output too low. Connection with the control interrupted.	Check wiring
	LED glows red and green	Reference point display		
teach mode	LED flashes green 1x	Activation of teach input 1 detected and confirmed.		
	LED flashes green 3x	Activation of teach input 2 detected and confirmed.		
	LED flashes red 3x	Error during the teaching process. The new measuring range has not been confirmed.	Selected measuring range <22.5° or >65536 rev.	Teach another measuring range.
	LED flashes green / red / green	Reset of the measuring range. Default measuring range is loaded. Preset is performed at the current position.		

STANDARD FUNCTION

As a standard, the corresponding desired output signal (4...20 mA / 0...10 V / 0...5 V) is linearily factory-scaled over 16 revolutions and supplied in the CW or CCW direction of rotation according to customer requirement.
With the factory-set „default" scaling, the LED displays the reference point of 0...1°. The reference point display is no longer available if another measuring range is taught using the teaching inputs.

TEACHING FUNCTION

Two teaching inputs (Set 1, Set 2) allow the user to define a desired measuring range. The desired measuring range must be >22.5° and must not exceed 65536 revolutions. The factory-set output range of 4...20 mA / 0...10 V / 0...5 V is scaled linearily over the desired measuring range. To trigger the teaching operation, the corresponding teaching input must be connected with the supply voltage +V for at least 1 s.



- The teaching function is limited to 10,000 cycles. Beyond this limit, the error-free scaling of the output signal cannot be guaranteed any more.
- Actuate the teaching inputs only once the shaft has stopped. Only this way will it be possible to take over the desired start and end position of the desired signal scaling.

Teaching process:
1. Turn the shaft to the desired start position.
2. Connect teach input 1 with +V for at least 1 s.
3. LED flashes green 1x.
4. Turn the shaft to the desired end position.
5. Connect teach input 2 with +V for at least 1 s.
6. LED flashes green 3x. The new measuring range is active.

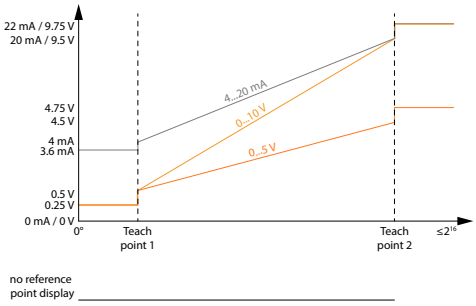
(The output signal assumes the highest state)

Teaching with direction of rotation change
Fixed output levels are assigned to the scaling inputs.
Teaching input 1 = lowest output level (current variant = 4 mA / voltage variant = 0 V)
Teaching input 2 = highest output level (current variant = 20 mA / voltage variant = 5 or 10 V)
If teaching input 2 is actuated first, followed by input 1, the new measuring range is defined with the reversed direction of rotation.

Resetting the taught output signal
1. Connect teaching inputs 1+2 with +V for at least 1 s.
2. The LED sequence green / red / green is displayed. The factory-set scaling of the output signal is available again and is set to the central value of the measuring range at the current position.

LIMIT SWITCH FUNCTION

With the limit switch function, the output signal does not remain at the last final value, but it makes a defined jump. This signal jump can be used by a control as a limit switch. The output levels of the limit switches are factory-set.



DECLARATION OF EU-CONFORMITY

WayCon Positionsmesstechnik GmbH
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This is to certify that the products

Classification analog encoders
Product series M36, M58
fulfil the current request of the following EU-directives
EMC-directive 2014/30/EU
RoHS-directive 2011/65/EU

applied harmonized standards:
EN 55011 class B:2009 + A1:2010, EN61000-6-3:2007 + A1:2011;
EN 61000-6-2:2005/AC:2005, EN 61326-1:2013; EN 50581:2012

This declaration of conformity loses its validity if the product is misused or modified with out proper authorisation.

Taufkirchen, 24.03.2020

Andreas Täger
CEO