INSTALLATION GUIDE

Accessory teach electronics Squeezer

FIRST STEPS

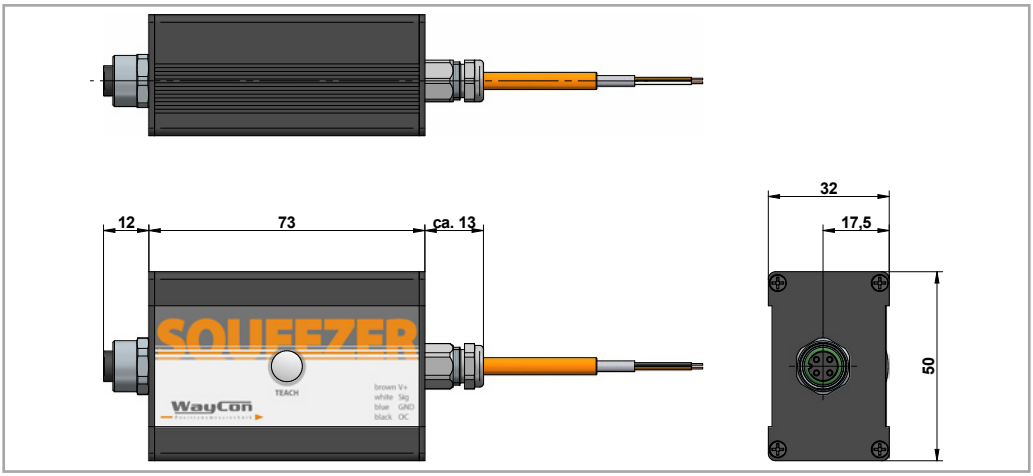
WayCon Positionsmesstechnik GmbH would like to thank you for the trust you have placed in us and our products. This manual will make you familiar with the installation and operation of the accessory for teachable sensors Squeezer. Please read this manual carefully before initial operation!

Unpacking and checking:
Carefully lift the device out of the box by grabbing the housing. Do not pull the rope. 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.

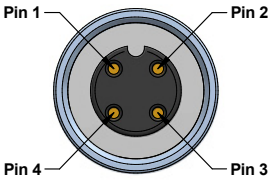
INTRODUCTION

The Squeezer is an external electronics, that allows to use the full range of features offered by WayCon draw wire sensors and linear potentiometers with the VT option (teachable voltage output). Due to an internal processing of the analogue output signal the sensor's measurement range can be taught, i.e. individually adjusted, and if desired a switching point can be set.
You can teach any number of sensors with the VT option with just one Squeezer, because the electronics just needs to be connected to the sensor during the teaching procedure. Afterwards the Squeezer can be replaced by a standard connection cable.
In case the switching output shall be used, the Squeezer needs to stay connected to the sensor. So here every sensor needs its own Squeezer.

TECHNICAL DRAWING



ELECTRICAL CONNECTION



Connector, female (to sensor)	
Pin 1	+V
Pin 2	Signal
Pin 3	GND
Pin 4	MFL [1]

Cable ends (to e. g. PLC)	
BN	+V
WH	Signal
BU	GND
BK	NPN [2]

[1] multifunctional line
[2] The Open Collector is an NPN switching output. Factory default settings (delivery state): The switching point is set right at the end of the sensor's full measurement range.

OPERATION

Normal mode: This is the working mode of the electronics. It will be active within 3 s after the initial supplying of power. In the Normal Mode the electronics emits a voltage value that is proportional to the measured distance. The voltage range of 0 to 5 V resp. 0 to 10 V lies within the programmed teach points. In the default setting (delivery state) the teach points equal the beginning and the end of the full measurement range.

Setting Mode: In this mode the electronics can be programmed. After putting the electronics into operation (supplying power) the button must be pressed twice to enter the Setting Mode. If successful, a "OK" is answered by the LED. A "NOT OK" is shown, if the sensor was moving while entering the Setting Mode (it must remain still during the procedure). In the Setting Mode 6 adjustment options are offered one after the other in a loop. Each adjustment option has its own individual light code (see table below) displayed by the LED. As soon as the desired adjustment option is active, it can be selected by pressing the button. The electronics confirms the programming by showing the "OK" sign, or if unsuccessful with a "NOT OK". To exit the Setting Mode just turn off (power off) the electronics.

Setting	Light code LED	Function
I	1 x short	lower teach point
II	2 x short	upper teach point
III	3 x short	switching point
IV	1 x short, 1 x long	delivery state
V	1 x long	no function
VI	1 x long, 1 x short	no function

LED signal	Light code LED
OK	
NOT OK	

Note regarding the settings:
Roman number I: short light pulse
Roman number V: long light pulse

SETTING THE SWITCHING POINT

In order to use the switching point function, the Squeezer must remain connected to the sensor after setting the switching point. The factory setting of the switching point corresponds to the end of the full measurement range of the sensor. If the setting point is not changed from the factory setting, the switching output can be used as an alarm output, that becomes active as soon as the end of the measurement range is reached.

SETTING THE SWITCHING POINT

The switching point can be placed anywhere within the measurement range and is independent of any teaching of the measurement range. Therefore, the switching point can lie outside of a taught range.

In the Normal Mode the LED displays the state of the switching output:
switching output active: LED = ON and open collector = low impedance to GND (max. 100 mA)
switching output inactive: LED = OFF and open collector = high impedance to GND (max. 30 V)

Setting the switching point

1. Move the sensor to the position, where the switching point shall be set.
2. Supply the electronics with power.
3. Enter the Setting Mode (see Operation).
4. Wait until the LED displays Code III (three short light signals) and confirm by pressing the push button.
5. Hereafter the electronics will confirm the setting of the switching point by displaying the "OK" signal, a slow turning on and then turning off again.
6. To exit the Setting Mode just turn off (power off) the electronics.

TEACHING THE MEASUREMENT RANGE

Every sensor is delivered with the maximum measuring range, stated in the data sheet. The teach-in feature was designed to choose a smaller working range within the nominal full measurement range. By teaching the sensor the voltage output gets a new characteristic curve. One or two points can be taught. If only one point is taught, the second point equals the beginning resp. the end of the full measurement range. The first point equals 0 V, the second to 10 V.
The Squeezer can be used to reduce the originally full measurement range down to 50%.
Example: sensor with 3 m full measurement range. The smallest possible teaching range is e.g. 0.3...1.8 m or 1.5...3 m.

Setting the teach limits

(In case you only want to set the upper teach point, start with 5).

1. Move the sensor to the position, where the lower teach point shall be set.
2. Enter the Setting Mode (see Operation).
3. Wait until the LED displays Code I and confirm by pressing the button.
4. Hereafter the electronics will confirm the setting of the teach point by displaying the "OK" signal. A "NOT OK" means, that the chosen teach range is too small. Change the lower teach point at the sensor and repeat point 3. In case no upper teach point shall be set, leave the Setting Mode now by turning off (power-off) the electronics.
5. Move the sensor to the position, where the upper teach point shall be set. If no lower teach point was set, enter the Setting Mode now.
6. Wait until the LED displays Code II and confirm by pressing the button.
7. Hereafter the electronics will confirm the setting of the upper teach point by displaying the "OK" signal. A "NOT OK" means, that the chosen teach range is too small. Change the upper teach point at the sensor and repeat point 6.
8. To exit the Setting Mode just turn off (power off) the electronics.

DELIVERY STATE

The factory default settings (delivery state) can be restored at any time. The switching point is set right at the end of the sensor's full measurement range and the teach range equals the full measurement range.

Restoring the delivery state

1. Enter the Setting Mode.
2. Wait until the LED displays Code IV and confirm by pressing the button.
3. The electronics will confirm the restored delivery state by displaying the "OK" signal.
4. To exit the Setting Mode just turn off (power off) the electronics.

ERROR MESSAGE „NOT OK"

1. While entering the Setting Mode (supplying power and then pressing the button twice) the sensor was moving. See section „Operation".
2. The teach range was set too small. See section "Teaching the measurement range".

DECLARATION OF EU-CONFORMITY

Manufacturer	WayCon Positionsmesstechnik GmbH Mehlbeerenstrasse 4 82024 Taufkirchen / Germany
	This is to certify that the products
Classification	signal conditioner
Product series	Squeezer
	fulfill the current request of the following EU-directives:
	EMC-directive 2004/108/EC (until April 19th, 2016) 2014/30/EU (from April 20th, 2016)
	applied harmonized standards: IEC 61326-1:2013

The declaration of conformity loses its validity if the product is misused or modified without proper authorisation.

Taufkirchen, 24.02.2016

Andreas Täger
CEO