



PT730520

Distance sensor with laser emission and time of flight measurement

MANUAL



CONTROLS



OUTPUT LED (yellow)
Yellow led's 1 and 2 lit, show digital outputs Q1 and Q2 enabled.

OUT OF RANGE / POWER ON LED (red/green) LED 3 lit RED shows an out of range measurement. LED 3 lit GREEN shows the sensor power on and the laser emission activated

INSTALLATION

The installation of the sensor can be carried out thanks to the two fixing holes on the body, by means of screws (eg M4x45 UNI5739) with nuts and washers. To install the product only and always refer to the reference surface (A) shown in Fig.1.

Adjustable fixing brackets are available in order to facilitate the sensor positioning. With direct fixing the unit has an angular adjustment range of the laser emission of $\pm 1.5^\circ$. The measurement refers to the front surface of the sensor as in Fig.2.



Fig.1

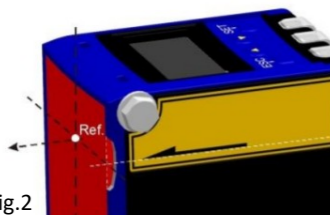


Fig.2

- 1) Connect a suitable cable socket (e.g. VK205A25) with the power supply switched off.
- 2) Attach the sensor to a suitable holder, taking care to make sure to first point the laser dot at the target.
- 3) Switch on the power supply. The measurement will be available within a few seconds after switching on. The unit only provides reproducible device only after a warm-up time of approx. 20min.
- 4) Simultaneously press both buttons of the PT73 for approx. 5s to release configuration mode. Release the configuration mode. When configuration is complete, the device locks automatically.

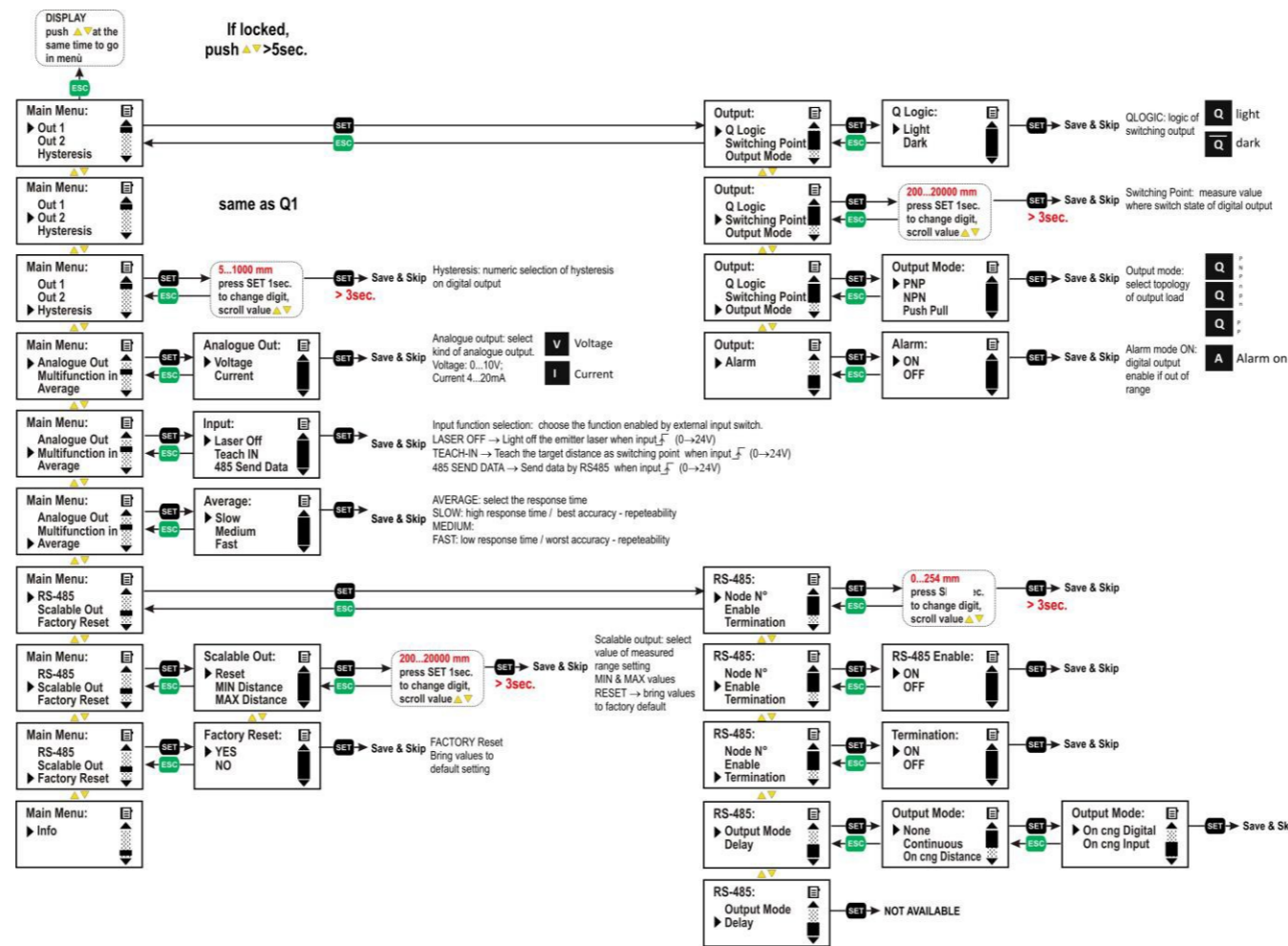
CONNECTIONS



- 1 (WHITE): RS485 -
- 2 (BROWN): +24 V $\pm 20\%$
- 3 (GREEN): ANALOGUE OUTPUT
- 4 (YELLOW): Q1 100mA max.
- 5 (GREY): Q2 100mA max.
- 6 (PINK): RS485 +
- 7 (BLUE): 0 V
- 8 (RED): MULTIFUNC.INPUT

Note: Color of wires are referred to European standard.

CONFIGURATION



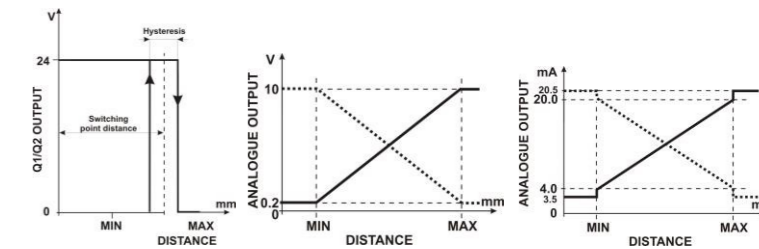
TECHNICAL DATA

PT730520													
Power supply:	24 VDC $\pm 20\%$												
Current consumption (without load):	typ. 125mA												
Measurement range:	0.2..20 m (90% white) / 0.2..8 m (18% grey) / 0.2..5 m (6% black)												
Accuracy (1 sigma / 90% white XRite target):	7 mm (slow response time)												
Repeatability (1 sigma / 90% white XRite target):	1 mm up to 10 m / <2 mm up to 20 m (slow response time)												
Resolution:	1 mm / 16 bit												
Hysteresis:	configurable (5 ... 1000 mm)												
Analogue output:	Configurable (0.2-10V / 4-20 mA / scalable) short-circuit protection												
(Linearity error $\pm 0.03\%$ FSy, $\pm 0.02\%$ FSi)													
Response time SLOW:	45 msec (typ)												
Response time MEDIUM:	30 msec (typ)												
Response time FAST:	15 msec (typ)												
RS 485	<p>output stream: </p> <p>Input command: <table border="1"> <tr> <th>RS-485 Cmd</th> <th>1° byte</th> <th>2° byte</th> <th>3° byte</th> <th>4° byte</th> <th>5° byte</th> </tr> <tr> <td>Get Measure</td> <td>"0x40" hex</td> <td>"0x43" hex</td> <td>"Node N°" hex</td> <td>"0x00" hex</td> <td>"0x01" hex</td> </tr> </table> </p>	RS-485 Cmd	1° byte	2° byte	3° byte	4° byte	5° byte	Get Measure	"0x40" hex	"0x43" hex	"Node N°" hex	"0x00" hex	"0x01" hex
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Get Measure	"0x40" hex	"0x43" hex	"Node N°" hex	"0x00" hex	"0x01" hex								
Switching output / Alarm:	Configurable (PNP / NPN / Push Pull / Q / Qneg)												
Multifunction input:	See also "Default Configuration"												
Warm up time:	20 min typ												
Indicators:	Q1 (YELLOW) / Q2 (YELLOW) / POWER ON (GREEN) - OUT OF RANGE (RED) out of reach (RED) 5-digit / multi display												
Operating temperature:	-15 ... 50 °C (with powered devices) - reduce the min temp. to -5°C in case of cold power on												
Storage temperature:	-25 ... 70 °C												
Dielectric strength:	500 VAC, 1 min between electronics and housing												
Insulating resistance:	> 20 M Ω , 500 VDC between electronics and housing												
Dimensions of the laser spot (T = 25°C)	typ. 15mm bei 10m												
Power of the laser transmitter / Wide input.:	1mW / 4ns												
Wavelength:	658 nm												
Laser class emission:	CLASS 2 According to IEC 60825-1 (2007)												
Ambient light rejection:	According to EN 60947-5-2, >40 Klux DC ambient light												
Vibrations:	0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)												
Shock resistance:	11 ms (30 G) 6 shock f or every axis (EN60068-2-27)												
Humidity:	< 90% not condensed												
Housing material:	ZINC ALLOY ZAMA 13 EN-1774 / Display: PC LEXAN 121R												
Lens material:	PMMA												
Mechanical protection:	IP67												
Connections:	M12 - 8 poles												
Dimension (max shape):	58 x 61 x 37 mm												
Peso	250 gr.max.												

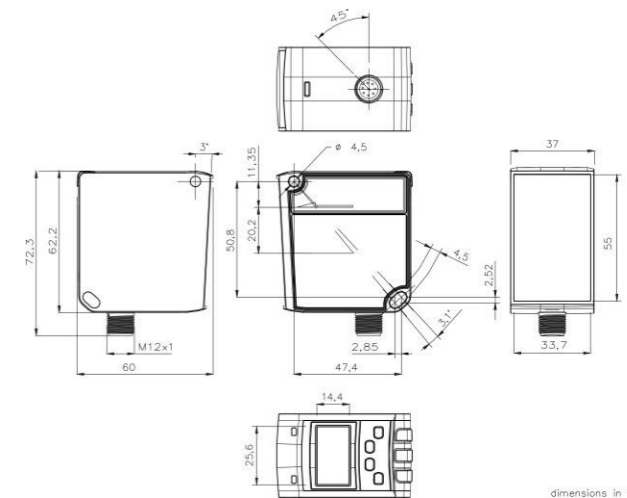
DEFAULT CONFIGURATION

average:	45ms (slow)
analog output:	4 ... 20mA
RS485 output mode:	None
RS485 termination:	Off
input function:	Teach in (switching output 1)
OUT 1 logic:	Light on
OUT 2 logic:	Light on
OUT 1 mode:	Push Pull
OUT 2 mode:	Push Pull
switching point 1:	500mm
switching output 2:	500mm
hysteresis:	10mm
scalable range min:	200mm
scalable range max:	20.000m

DETECTION DIAGRAMS



DIMENSIONS



SAFETY WARNINGS

All the safety electrical and mechanical regulations and laws have to be respected during sensor functioning. The sensor has protected against mechanical damages. Do not look directly into the laser beam! Do not point the laser beam towards people! Eye irradiation for over 0.25 seconds is dangerous; refer to class 2 standard (EN60825-1). This product is intended for indoor use only. Use of controls or adjustments or performance or procedures other than those specified herein may result in hazardous radiation exposure.



MAINTENANCE

Device do not need for particular maintenance. Anycase, take care to clean optic surface with compliant cleanser in order to avoid decay of performance. Use protection for plastic parts in case of hazardous environment.

The sensors are NOT safety devices, and so MUST NOT be used in the safety control of the machines where installed.