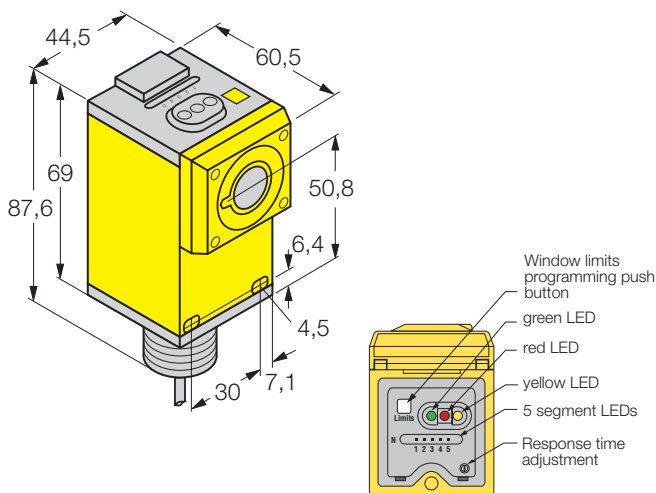


Remote Ultrasonic Sensors

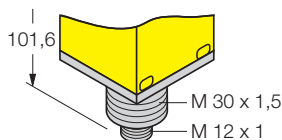


Dimensions [mm]

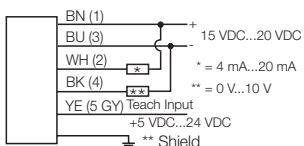
● Cable



● Connector



Wiring



** Shield wire should be connected to earth ground or DC common

Q45UR Series DC-Operation with Analogue Output

Supply voltage U_B	15 VDC...24 VDC
Ripple V_{pp}	$\leq 10\%$
No load current	$\leq 100\text{ mA}$
Protection	short-circuit reverse polarity
Output	selectable with DIP-switch
Voltage output	0 VDC...10 VDC
Load current	$\leq 10\text{ mA}$
Supply output	4 mA...20 mA
Load impedance	1 Ω ...500 Ω
Sensing window	
Range	50 mm...250 mm (Teach-mode setup)
Resolution	0,2%...0,4% of sensing distance dependant on target
Temperature drift	$\pm 0,03\%/^{\circ}\text{C}$ (0 $^{\circ}\text{C}$...+50 $^{\circ}\text{C}$) $\pm 0,05\%/^{\circ}\text{C}$ (-25 $^{\circ}\text{C}$...+70 $^{\circ}\text{C}$)
Response speed	10 ms...320 ms (adjustable)
Material	
Controller housing	Thermoplastic polyester
Controller transparent cover	Acrylic
Protection class (IEC 60529/EN 60529)	IP67
Temperature range	-25 $^{\circ}\text{C}$...+70 $^{\circ}\text{C}$
Cable	2 m, PVC, 5 x 0,34 mm ²
Connector	<i>Euro-Style</i> 5-pin
Indicator LED's	
Yellow	target within sensing window
Green	power-on
Green flashing	current output overload (open circuit)
Red flashing	target within sensing window (flashing frequency in propor- tion to the received signal strength)
5 segment red LED	target position

Accessories

Brackets, Controller

SMB30MM	37 849 00	angle bracket
SMB30S	34 706 00	swivel mount bracket
SMB30C	34 701 00	split clamp bracket

Connectors

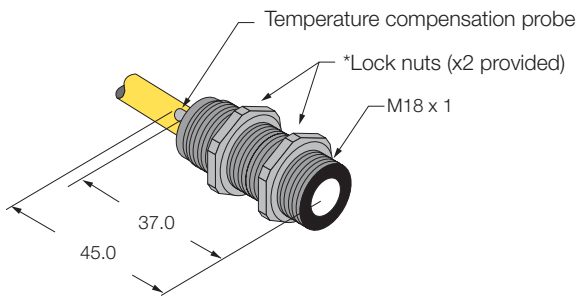
MQDEC2-506	30 608 10	straight type
MQDEC2-506RA	30 608 13	right-angled type

Transducers for Remote Ultrasonic Sensors Q45UR Series



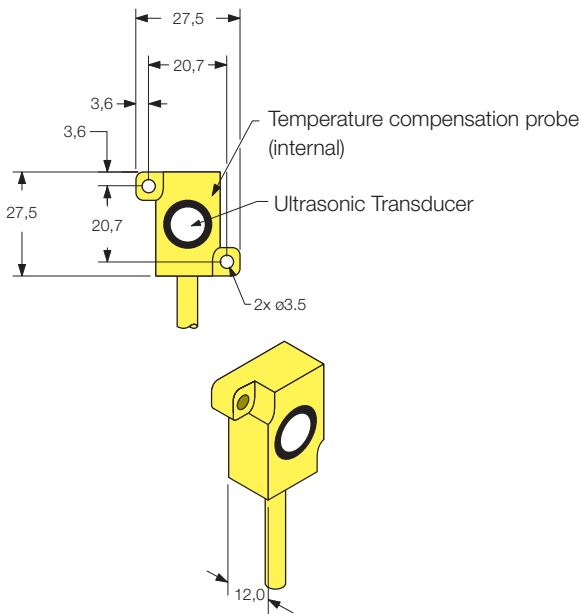
Dimensions [mm]

● M18C2.0 and S18C2.0 sensors



*S18C2.0 sensor has locknuts with grip

● Q13C2.0



M18C2.0

Material	stainless steel (x2 locknuts included)
Front cover	ULTEM®
Rear cover	TEXIN®
Protection class (IEC 60529/EN 60529)	IP65
Cable	2 m, PVC, 4 x 0,34 m2
Connector	<i>Euro-Style</i> 5-pin
Ultrasonic beam angle	3,5°

S18C2.0

Material	thermoplastic polyester (x2 locknuts with grip included)
Front cover	ULTEM®
Rear cover	TEXIN®
Protection class (IEC 60529/EN 60529)	IP65
Cable	2 m, PVC, 4 x 0,34 m2
Connector	<i>Euro-Style</i> 5-pin
Ultrasonic beam angle	3,5°

Q13C2.0

Material	glass reinforced thermoplastic polyester, epoxy encapsulated
Protection class (IEC 60529/EN 60529)	IP65
Cable	2 m, PVC, 4 x 0,34 m2
Connector	<i>Euro-Style</i> 5-pin
Ultrasonic beam angle	3,5°

Accessories

Brackets, Sensors

SMB18A	34 702 00	angle bracket
SMB18C	34 700 00	split clamp bracket
SMB18S	34 707 00	swivel mount bracket

Remote Ultrasonic Sensors

Adjustment of the sensing distance (open cover on top of the controller housing)

Push Button

Step 1
Hold push button for approx. 2 s
until green LED turns off.

Step 2
First limit (near or far)
Place target at first limit and
click push button less than 2 s

Step 3 *
Second limit (near or far)
Place target at second limit and
click push button less than 2 s

Status indication

green LED first ON; then goes OFF
yellow LED on - indicates TEACH mode
red LED flashes in direct proportion to received signal strength
when target is detected; LED OFF if no target is detected

green LED off
yellow LED flashes at 2 Hz - indicates ready for TEACHING
red LED on shortly; then flashes in direct proportion to the re-
ceived signal strength

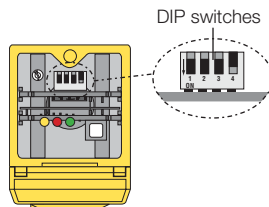
green LED first off; then glows steadily to indicate RUN mode
yellow LED on shortly; then LED on or off according to output
status (RUN mode)
red LED on shortly; then flashes in direct proportion to the re-
ceived signal strength (RUN mode)

* Target positions must be at least 5 mm apart. If the target is held at the same position a sensing window is established centered around the target and as wide as specified by DIP switch 2 and 3.

Programming of the analog output with DIP switches (DIP switches beneath cover on top of the controller housing)

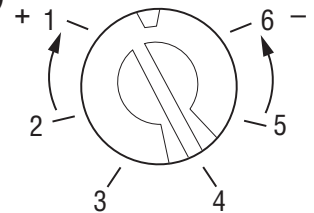
Switch	Function	Adjustment
1	Output curve	ON = increase, positive slope OFF* = decrease, negative slope
2	Output mode	ON = current OFF* = voltage
3	Behaviour when echo is lost	ON = MIN.-MAX. mode OFF* = HOLD mode
4	MIN.-MAX. mode	ON * = go to max. value OFF = go to min. value

*factory programming



Programming of the response time (potentiometer beneath cover on top of the controller housing)

Position	Response time (ms)
1	10
2	20
3	40
4	80
5	160
6	320



NOTE: This example shows the potentiometer set at position number 4. There are no numbers on the actual product label.

Min.-max. mode

When the echo is lost (e.g. due to vibrations of shaft runout) it is possible to choose between several reaction modes of the sensor. In MIN.-MAX. mode, the output jumps to the minimum or maximum value according to the position of DIP switch 4. In the HOLD mode, the last output value is maintained until a new measured value has been recorded.

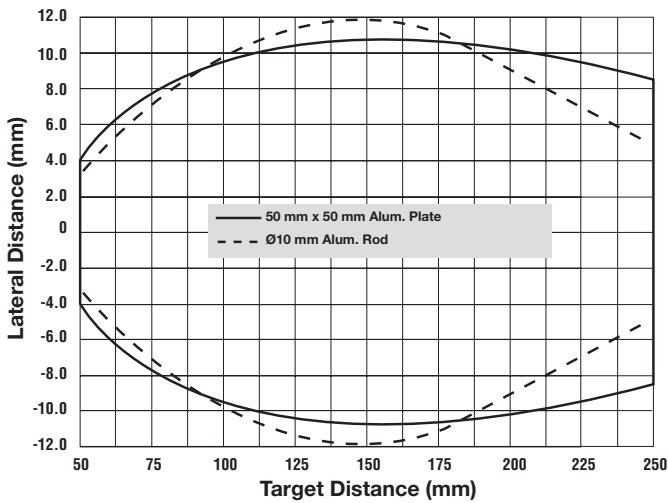
Remote Ultrasonic Sensors

Q45UR Series DC-Operation with Analogue Output

Model	Ident number	Type	Programmable range [mm]	Output	Connection
Q45UR3LIU64C	30 530 12	controller		4 mA...20 mA, 0 V...10 V	cable
Q45UR3LIU64CQ6	30 530 14	controller		4 mA...20 mA, 0 V...10 V	connector
Q45UR3LIU64CK	30 537 45	kit with M18C2.0	50...250	4 mA...20 mA, 0 V...10 V	cable
Q45UR3LIU64CKQ	30 594 31	kit with Q13C2.0	50...250	4 mA...20 mA, 0 V...10 V	cable
Q45UR3LIU64CKS	30 594 34	kit with S18C2.0	50...250	4 mA...20 mA, 0 V...10 V	cable
Q45UR3LIU64CQ6K	30 537 44	kit with M18C2.0	50...250	4 mA...20 mA, 0 V...10 V	connector
Q45UR3LIU64CQ6KQ	30 594 33	kit with Q13C2.0	50...250	4 mA...20 mA, 0 V...10 V	connector
Q45UR3LIU64CQ6KS	30 594 36	kit with S18C2.0	50...250	4 mA...20 mA, 0 V...10 V	connector
M18C2.0	30 530 22	sensor	50...250		
Q13C2.0	30 594 24	sensor	50...250		
S18C2.0	30 568 27	sensor	50...250		

All sensors have **temperature compensation**

Analogue Q45UR Series Response Curves



Subject to changes without notice • Edition 12.03 • P/N ED048



These sensors do not include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can result in either an energised or de-energised output condition. These products should not be used as sensing devices for personnel safety.