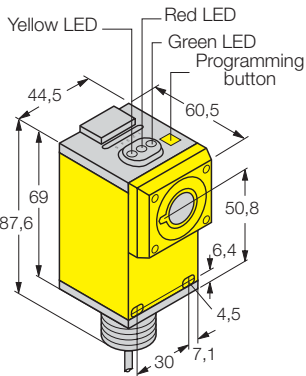


Ultrasonic Sensors



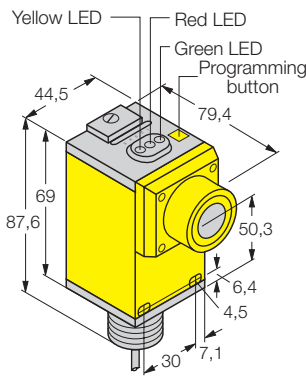
**U-Gage™
Q45U Series
With Digital Output**

Supply voltage U_s	12...24 VDC
Ripple V_{pp}	≤ 10 %
No load current	≤ 100 mA
Protection	short-circuit reverse polarity
Output	NPN, PNP selectable NC/NO adjustable with DIP-switch (see table on next page)
Response time delay	
Continuous load current	≤ 150 mA
Sensing window, adjustable	with Teach-in-function (see table on next page)
Rated control element	100 x 100 mm
Repeat accuracy R	
Type Q45U-BB63-DA...	approx. 0.1% (min. ± 0.25 mm)
Type Q45U-BB63-BC...	approx. 0.1% (min. ± 0.5 mm)
Temperature drift	
without temp. compensation	0.18%/°C
with temp. compensation	1%/°C (0...50 °C) 2.5%/°C (-25...+70 °C)
Material	
Housing	PBT
Material transparent cover	Acrylic
Protection class	IP67
(IEC 529/DIN 40050-9)	
Temperature range	-25...+70 °C
Cable	2 m, PVC, 5 x 0.34 mm ²
Connector	<i>Eurocon</i>
Indicator LED's	
Yellow	output status
Green	power-on
Green flashing	output overload
Red	target within sensing window (flashing frequency in proportion to the received signal strength)

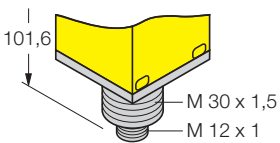


Type... DA...

● **With Connector**

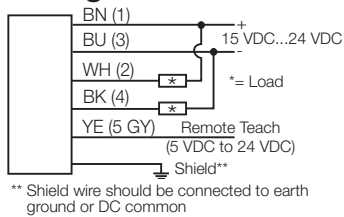


Type... BC...

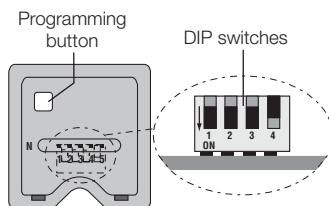


Type... Q6...

Wiring



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



Accessories

Brackets		
SMB30A	34 703 00	angle bracket
SMB30S	34 706 00	swivel mount bracket
SMB30C	34 701 00	split clamp bracket
Connectors		
RK4.5T-2	66 338 03	straight type
WK4.5T-2	66 600 02	right-angled type
WAK4.5-2/P00	80 085 76	straight type
WWAK4.5-2/P00	80 085 83	right-angled type

Ultrasonic Sensors

U-Gage™ Q45U Series

With Digital Output

Type	Sensing window (cm)	• Temperature compensation	Switching hysteresis (mm)	Response time per cycle (ms)	Digital Output	Connection	Ident number
Q45UBB63DA	10...140	-	5	20/40/160/640	PNP/NPN	cable	30 441 28
Q45UBB63DAQ6	10...140	-	5	20/40/160/640	PNP/NPN	connector	30 441 30
Q45UBB63DAC	10...140	•	5	20/40/160/640	PNP/NPN	cable	30 441 32
Q45UBB63DACQ6	10...140	•	5	20/40/160/640	PNP/NPN	connector	30 441 34
Q45UBB63BC	25...300	•	10	40/80/320/1280	PNP/NPN	cable	30 463 60
Q45UBB63BCQ6	25...300	•	10	40/80/320/1280	PNP/NPN	connector	30 463 63

Adjustment of the switching limits (open cover on top of the sensor housing)

Pushbutton Control

Step 1
Hold in button for approx. 2 s until green LED goes OFF

Status indication

green LED OFF
yellow LED ON - indicates TEACH mode
red LED flashes in direct proportion to received signal strength when target is detected

Step 2
Set first limit (near or far)
Place target at first limit and press button (less than 2 s)

green LED OFF
yellow LED flashes at 2 Hz - indicates the TEACH mode for second limit
red LED ON briefly; then flashes in direct proportion to the received signal strength

Step 3
Set second limit (near or far)
Place target at second limit and press button (less than 2 s)

green LED first OFF; then comes ON to indicate RUN mode
yellow LED comes ON briefly then LED is ON or OFF according to output status (RUN mode)
red LED ON briefly; then flashes in direct proportion to the received signal strength (RUN mode)

Programming of digital output with DIP-switches

(DIP-switch beneath cover on top of the sensor housing)

Switch	Function	Adjustment
1	Output	ON = N.C. OFF* = N.O.
2	Output mode	ON = High/low OFF* = ON/OFF

* Factory programming

ON/OFF mode

The output energizes when a target is sensed (not sensed if switch 1 is ON) between the near and far limits of the defined sensing range.

High/Low mode

The output energizes when a target reaches the far limit of the defined sensing range (near limit if switch 1 is ON).

The output will only de-energize when the target crosses the near limit of the defined sensing range (far limit if switch 1 is ON).

Programming of response time with DIP-switches

(DIP-switch beneath cover on top of the sensor housing)

Set the number of cycles needed until the sensor output switches using switch 3 and switch 4. It is recommended to use the slowest setting that is acceptable for the application. The cycle time is 20 ms/cycle for the Q45U-BB63-DA* models and 40 ms/cycle for the Q45U-BB63-BC* models.

Switch 3	Switch 4	Response time (cycles)
OFF	OFF	1
ON	OFF	2
OFF*	ON	8
ON	ON	32

* Factory programming