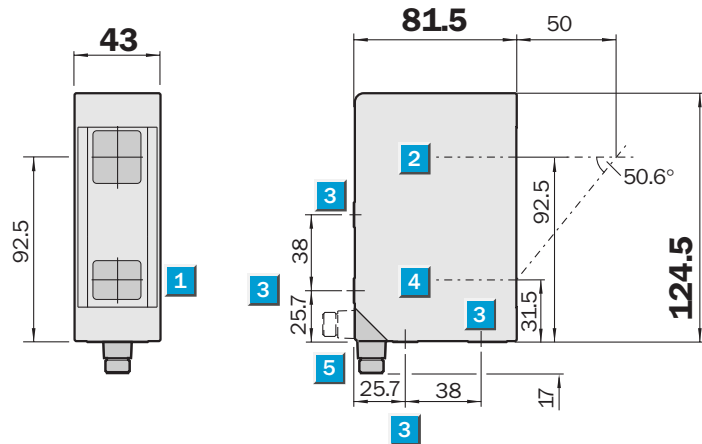


	Scanning distance 42 to 62 mm
DMH standard	

- No additional hardware components required
- Easy to operate
- Insensitive to ambient light
- Various integrated software variants

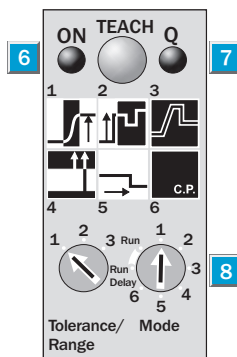
Dimension illustration



Setting options

DMH 2-P11111

DMH 2-N11111

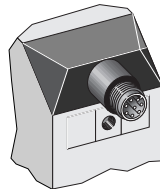


- 1 Light source window
- 2 Receiver axis
- 3 Mounting hole M 6/8 deep
- 4 Sender axis
- 5 M 12 connection plug, 8 pin, 90° rotatable
- 6 Power indicator
- 7 Status indicator
- 8 Operating components

Connection type

DMH 2-P11111

DMH 2-N11111



8 pin, M 12

whi	1	AT
brn	2	L+
grn	3	Q _A 4 ... 20 mA
yel	4	NC
gra	5	ET
pnk	6	Q ₁
blu	7	M
red	8	Q ₂



Accessories

- Cable receptacles
- Mounting bracket

Technical data		DMH 2		-P 11111	-N 11111								
Scanning distance SD ¹⁾	42 to 62 mm												
Supply voltage V_S ²⁾	18 to 30 V DC												
Power consumption ³⁾	< 250 mA												
Ripple ⁴⁾	≤ 5 V _{pp}												
Light source	Laser diode, red light, average service life 50,000 h ⁵⁾												
Laser protection class	2 (IEC 825-1/EN 60825-1)												
Length of the light line	Approx. 25 mm (at SD = 52 mm)												
Switching outputs Q₁, Q₂	PNP												
	NPN												
Signal voltage	HIGH = V _S - (≤ 2 V)/LOW = 0 V												
	HIGH = V _S /LOW ≤ 2 V												
Switching current I _A	100 mA, short circuit proof												
Response time ⁶⁾	4.5 ms												
Switching frequency ⁷⁾	160/s												
Analog output ⁸⁾	4 mA to 20 mA ⁹⁾ ; 3 mA ¹⁰⁾												
Time delay (Run/Run Delay)	20 ms, selectable												
Blanking input AT													
Blanked (triggered)	> 18 V to < V _S max. 0 V to V _S - (≥ 18 V)												
Asynchronous	< 2 V or open-circuit V _S - (≤ 2 V) or open-circuit												
Operating mode	Either permanently or synchronised (blanked)												
VDE protection class ¹¹⁾	□												
Enclosure rating	IP 67												
Ambient temperature ¹²⁾	Operation -10 to +50 °C Storage -25 to +75 °C												
Weight	Approx. 1000 g												

- 1) From front lens
2) Limit values, reverse-polarity protected
3) Without load
4) Must be within V_S tolerances

- 5) At T_A = +25 °C
6) With resistive load
7) With light/dark ratio 1:1,
no time delay

- 8) At R_{Lmax} = 700 Ω
9) Within the measurement area
(see table for mode settings with
available analog output)

- 10) External to the measurement area
11) Withstand voltage 50 V DC
12) Do not bend cable below 0 °C

Software modes				Ordering information	
				Type	Order no.
Software modes 1–5	Tolerance setting 1	Tolerance setting 2	Tolerance setting 3	DMH 2-P11111	1 016 239
1 Initial/end areas	Initial/end areas: 4 mm ²⁾	Initial/end areas: 7 mm ²⁾	Initial/end areas: 10 mm ²⁾	DMH 2-N11111	1 016 240
2 Step height evaluation	Peak evaluation (between the highest and lowest high level)	Evaluation of all step height differ- ences that are greater than the required min. height difference	Not currently assigned		
3 Profile detection ¹⁾	–	–	–		
4 Filling level	Evaluation of the complete light line	Evaluation of the half light line	Evaluation of 1/4 of the light line		
5 Shingle detection/ Edge control ¹⁾	–	–	–		

- 1) The tolerance is set using the tolerance switch
2) At SD = 52 mm

Software modes 1–5	Features	Required min. height diff./height	Resolution of the analog output
1 Initial/end area	Analog ³⁾ /switching output Q ₁	± 2.0 mm	0.5 mm
2 Step height evaluation			
① Step height evaluation	Analog ³⁾ /switching output Q ₁	3.8 mm	1 mm
② > Min. height difference	Switching output Q ₁	3.8 mm	–
③ Not assigned	–	–	–
3 Profile detection	Switching output Q ₁	0.7 mm (Tol. 1, SD = 52 mm)	–
4 Filling level	Analog output ³⁾ / 2 switching outputs Q ₁ , Q ₂	< 1 mm	1 mm
5 Edge control ¹⁾	Analog ³⁾ /switching output Q ₁	> 3.8 mm	1 mm

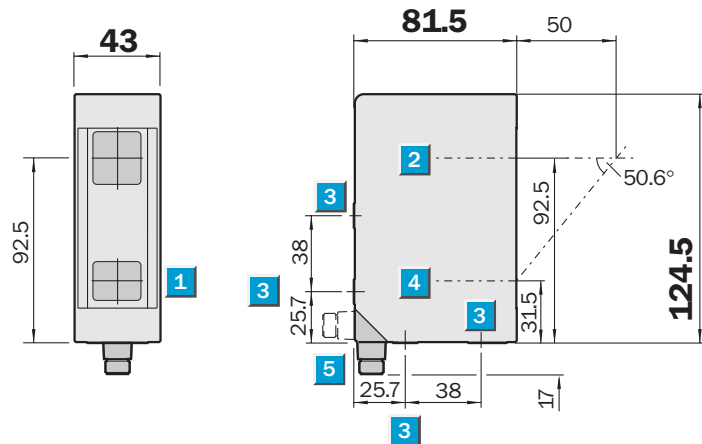
- 3) Values of the analog output: within the measurement area: 4 mA to 20 mA/external to the measurement area: 3 mA

DMH Shingle Counter

	Scanning distance
	42 to 62 mm/ 70 to 110 mm
DMH shingle counter	

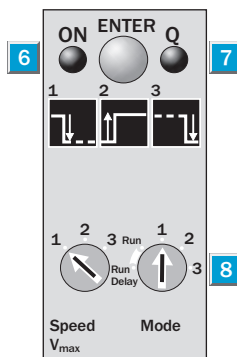
- Counting even during fluctuation or vibration of conveyor belt
- Correct counting even when shingle flow is interrupted

Dimension illustration



Setting options

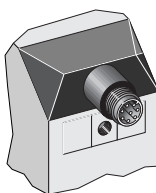
DMH 2-P23111	DMH 2-P24111
DMH 2-N23111	DMH 2-N24111



- 1 Light source window
- 2 Receiver axis
- 3 Mounting hole M 6/8 deep
- 4 Sender axis
- 5 M 12 connection plug, 8 pin, 90° rotatable
- 6 Power indicator
- 7 Status indicator
- 8 Operating components

Connection type

DMH 2-P23111	DMH 2-P24111
DMH 2-N23111	DMH 2-N24111



8 pin, M 12

whi	1	AT
brn	2	L+
grn	3	NC
yel	4	NC
gra	5	NC
pnk	6	Q1
blu	7	M
red	8	NC

Accessories

Cable receptacles
Mounting bracket



Technical data		DMH 2	-P 23111	-N 23111	-P 24111	-N 24111						
Scanning distance SD ¹⁾	42 to 62 mm											
	70 to 110 mm											
Supply voltage V_S ²⁾	18 to 30 V DC											
Power consumption ³⁾	< 250 mA											
Ripple ⁴⁾	≤ 5 V _{pp}											
Light source	Laser diode, red light ⁵⁾											
Laser protection class	2 (IEC 825-1/EN 60825-1)											
Length of light line	Approx. 7 mm (at SD = 52 mm)											
	Approx. 9 mm (at SD = 90 mm)											
Accuracy (at shingle level)	> 1.6 mm											
	> 3.1 mm											
Switching output	PNP											
	NPN											
Signal voltage	HIGH = V _S - (≤ 2 V)/LOW = 0 V											
	HIGH = V _S /LOW ≤ 2 V											
Switching current I _A	100 mA, short circuit proof											
Response time ⁶⁾	3 ms											
Switching frequency ⁷⁾	250/s											
Max. speed of conveyor belt	1.3 m/s											
	1.7 m/s											
Time delay	20 ms, selectable											
Blanking input AT												
Blanked (triggered)	> 18 V to < V _S max.											
	0 V to V _S - (≥ 18 V)											
Asynchronous	< 2 V or open-circuit											
	V _S - (≤ 2 V) or open-circuit											
Operating mode	Optional: permanent or synchronised (blanked)											
VDE protection class ⁸⁾	□											
Enclosure rating	IP 67											
Ambient temperature ⁹⁾	Operation -10 to +50 °C											
	Storage -25 to +75 °C											
Weight	Approx. 1000 g											

1) From front lens

2) Limit values, reverse-polarity protected

3) Without load

4) Must be within V_S tolerances5) Average service life 50,000 h at T_A = +25 °C

6) With resistive load

7) With light/dark ratio 1:1, no time delay

8) Withstand voltage 50 V DC

9) Do not bend cable below 0 °C

Ordering information

Type	Order no.
DMH 2-P23111	1 016 333
DMH 2-N23111	1 016 453
DMH 2-P24111	1 016 937
DMH 2-N24111	1 016 938

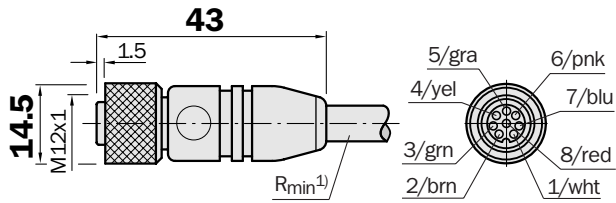
Dimension illustration and ordering information

SENSICK M 12 round screwing system, 8 pin, enclosure rating IP 67

M 12 cable receptacles, 8 pin, straight, screened

Cable diameter 6.6 mm, 8 x 0.25 mm², PVC coating

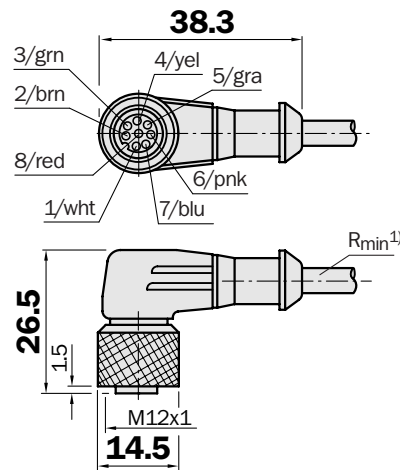
Type	Order no.	Cable length
DOL-1208-G02MA	6 020 633	2 m
DOL-1208-G05MA	6 020 993	5 m



M 12 cable receptacles, 8 pin, angled, screened

Cable diameter 6.6 mm, 8 x 0.25 mm², PVC coating

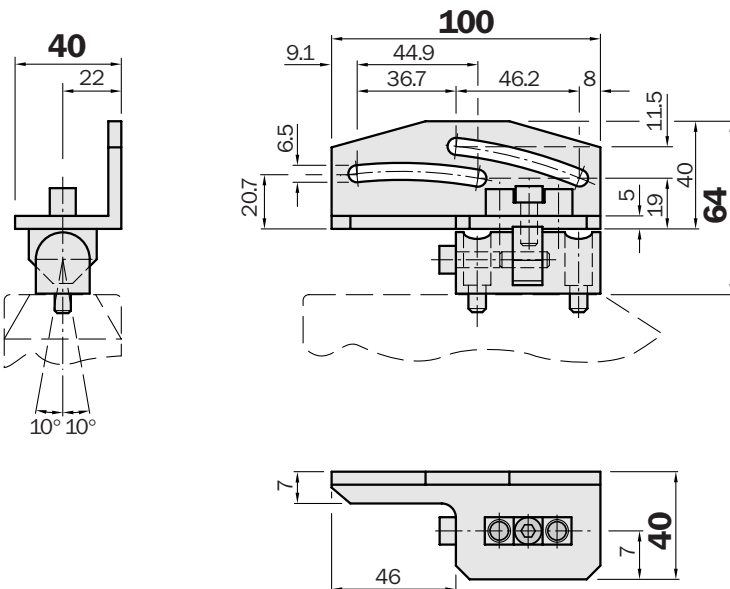
Type	Order no.	Cable length
DOL-1208-W02MA	6 020 992	2 m
DOL-1208-W05MA	6 021 033	5 m



1) Minimum bending radius for dynamic use
 $R_{min} = 20 \times \text{cable diameter}$

Articulated fixture suited for DMH

Type	Order no.
BEF-GH-DMH 2	2 020 796



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