



Universidad de Valladolid



**ESCUELA DE INGENIERÍAS
INDUSTRIALES**

ANEXOS

Autor:

Severt Silva, Adrián

**Automatización de una estación de
llenado al vacío de transformadores**

1. Catálogo de productos utilizados

Se incluyen a continuación las fichas técnicas de todos aquellos componentes eléctricos, electrónicos o mecánicos que se han incluido durante la fase de automatización de la instalación. Son, siguiendo el orden establecido a continuación, los siguientes elementos:

- Válvula de solenoide Burkert 137764, 2 puertos, 24 Vdc
- Sensor de distancia Background Suppression, LED
- Sensor ultrasónico Pepperl + Fuchs, 30 → 400 mm
- Barrera inmaterial Smartscan 012-104, 30mm, Emisor y receptor
- Vacuostato SMC, R 1/8, 100 kPa a -100kPa
- Sonda PT100 1.5m, PT100
- Manómetro positivo analógico entrada de Botón 3bar -1bar
- Sonda de nivel Gems Sensors 208995
- Manómetro positivo analógico $\pm 1,6$ % Entrada Trasera 6bar
- Contactador 25 A, 3 NA, Bobina 24 Vdc
- Puntera hueca de crimpado
- Canalización Ranurada para Cable
- Motor AC con caja reductora trifásico de inducción, 70 rpm, 230, 400 Vac, 49 W.

16 mm Miniature Rocker Solenoid Valve with Isolating Diaphragm for Analytical Applications



6605/6606

2/2- and 3/2-Way; Orifice 0.6 mm

Dead volume free design on request

Compact size

Hermetic isolation of fluid from the actuator

High back-pressure rating

Body materials: PEEK, PVDF, ETFE

Flow diagnosis on request

Analytical Control

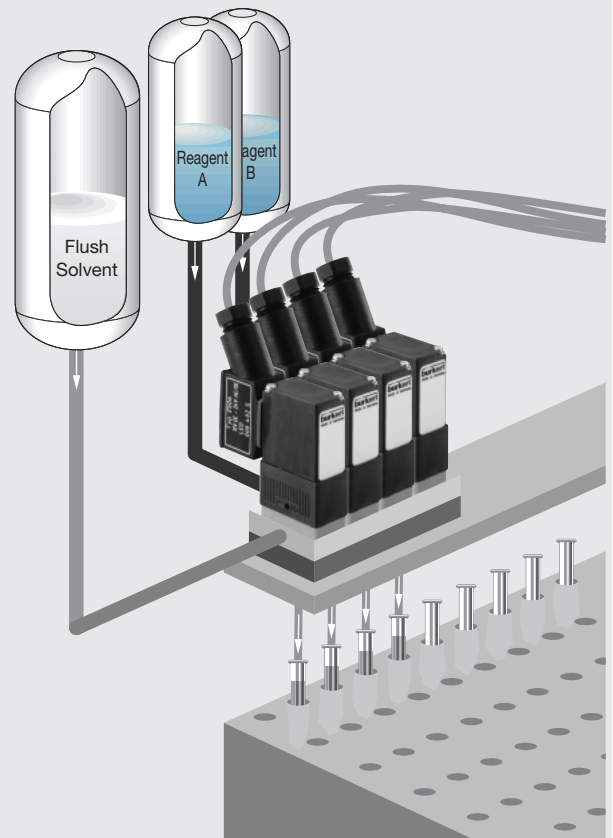
6605
6606

The 6605/6606 analytical solenoid valves combine all state of the art features in a compact design. With high reliability, virtually no heat transfer between fluid and coil, minimized dead volume and Burkert's expertise in supplying customized solutions, these valves are a perfect fit even for the most demanding applications.

Process Specification

Nominal voltage	12, 24 V/DC 110 - 120 V/UC 230 - 240 V/UC
Voltage tolerance	± 10%
Power consumption	3.4 W at 12, 24 V/DC 4 W at 110 - 120, 230 - 240 V/DC
Duty cycle	100% continuously rated
Cycling rate	Approx. 300 c.p.m.
Protection class	<ul style="list-style-type: none"> • IP 65 with leads or cable plug 2506 • IP 67 with round plug • IP 40 with rectangular plug
Electrical connection	(see dimensions)
Pressure range max.	Vacuum to 2 bar (see specifications)
Materials	
Body	PEEK for sub-base body PVDF for G 1/8, NPT 1/8 and tube connection body ETFE for UNF body FFKM (SIMRIZ Perfluorelastomer)
Seal	
Fluids	Aromatics, ethers, esters, ketones, solvents (PEEK body only)
Temperatures	
Fluid	0°C up to +50°C
Ambient	Max. +55°C
Max. viscosity	Approx. 21 mm ² /s
Response time	Approx. 20 ms
Internal volume	
G1/8, NPT1/8	85 µl
Sub-base	68 µl
UNF 1/4-28	30 µl (2/2), 55 µl (3/2)
On request	< 5 µl

- Applications:**
- Medical technology
 - Biotechnology
 - Analytical instruments
 - Disinfectants and solvents
 - Strong acids and bases, oxidizing solutions



16 mm Miniature Rocker Solenoid Valve with Isolating Diaphragm for Analytical Applications

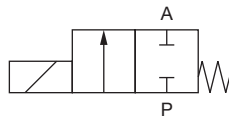
Technical Data

Type 6605: 2/2-way

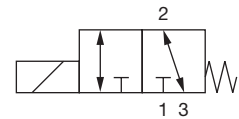
Type 6606: 3/2-way

Circuit Function

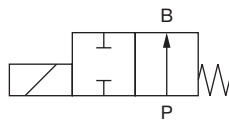
A 2/2-way valve, direct acting normally closed



T 3/2-way valve, direct acting, universal function, any flow direction (mixing or distributing versions)



B 2/2-way valve, direct acting normally open



Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]		Qn-Value (air) [l/min]		Pressure range [bar]	Back pressure [bar]	Response time [ms]	Weight [g]
		2/2-way	3/2-way	2/2-way	3/2-way				
G1/8, NPT1/8	1.6	0.060	0.047	65	42	Vac. - 2	2	25	65
Flange	1.6	0.039	0.032	65	42	Vac. - 2	2	25	56
UNF1/4-28	1.5	0.039	0.025	65	42	Vac. - 2	1	25	63
Tube	1.6	0.039	0.025	65	42	Vac. - 2	1	25	60

Flow rate: Kv-value water [m³/h]

Measured at +20°C, 1 bar pressure to atmosphere

Pressure ranges [bar]

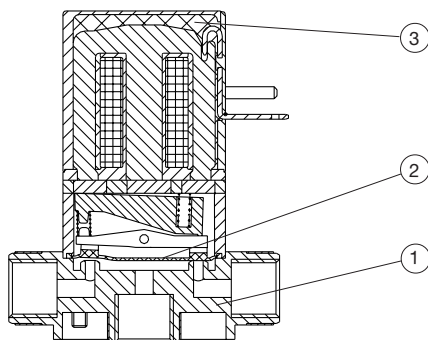
Measured as overpressure to the atmospheric pressure

Response times [ms]

Measured at valve outlet at 2 bar and +20°C

Opening Pressure rise from 0 to 90%
Closing Pressure drop from 100 to 10%

Materials



- 1 Valve body:
- 2 Diaphragm:
- 3 Coil body:

PEEK, PVDF or ETFE
FFKM (SIMRIZ)
PA (Polyamide)

Ordering-Information Accessories

Accessory	Description	Item-No.
Rectangular plug 5.08 mm	3 m cable	133 486 F
	300 mm leads	644 068 N
	single contacts for manifold mounting	644 067 D

Additional Accessories on request:

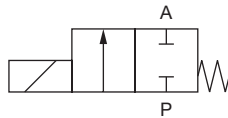
- Multivalve manifolds
- Flow diagnostics
- Fittings and tubes

16 mm Miniature Rocker Solenoid Valve with Isolating Diaphragm for Analytical Applications

Specifications - Ordering Chart (Other Versions on Request)

Circuit Function A

2/2-way valve, direct acting normally closed



PVDF Valve Body

Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
G 1/8	1.6	0.060	65	Vac. - 2	2	FFKM	leads, 500mm	0.062	12/DC ¹⁾	137 749 H
G 1/8	1.6	0.060	65	Vac. - 2	2	FFKM	rect. plug	0.062	24/DC ¹⁾	139 146 X
G 1/8	1.6	0.060	65	Vac. - 2	2	FFKM	cab. plug 2506	0.062	230/DC/AC ²⁾	137 746 W 137 748 G
NPT 1/8	1.6	0.060	65	Vac. - 2	2	FFKM	leads, 500mm	0.065	137 753 V	137 754 W
NPT 1/8	1.6	0.060	65	Vac. - 2	2	FFKM	cab. plug 2506	0.065	–	137 750 E
Tube	1.6	0.039	42	Vac. - 2	1	FFKM	leads, 500mm	0.057	137 763 X	137 764 Y
Tube	1.6	0.039	42	Vac. - 2	1	FFKM	rect. plug	0.057	–	139 147 Y
Tube	1.6	0.039	42	Vac. - 2	1	FFKM	cab. plug 2506	0.057	137 762 W	137 760 G

ETFE Valve Body

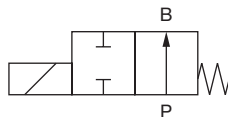
Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
UNF 1/4-28	1.5	0.039	42	Vac. - 2	2	FFKM	leads, 500mm	0.063	137 758 A	137 759 B
UNF 1/4-28	1.5	0.039	42	Vac. - 2	2	FFKM	cab. plug 2506	0.063	–	142 863 Z
UNF 1/4-28	1.5	0.039	42	Vac. - 2	2	FFKM	rect. plug	0.063	–	137 755 X

PEEK Valve Body

Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
Sub-base	1.6	0.039	42	Vac. - 2	2	FFKM	leads, 500mm	0.053	137 744 U	137 745 V
Sub-base	1.6	0.039	42	Vac. - 2	2	FFKM	rect. plug	0.053	–	137 751 T
Sub-base	1.6	0.039	42	Vac. - 2	2	FFKM	cab. plug 2506	0.053	137 743 T	137 741 Z

Circuit Function B

2/2-way valve, direct acting normally open



PVDF Valve Body

Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
G 1/8	1.6	0.060	65	Vac. - 2	2	FFKM	cab. plug 2506	0.062	–	137 747 X
NPT 1/8	1.6	0.060	65	Vac. - 2	2	FFKM	cab. plug 2506	0.065	–	137 751 T
Tube	1.6	0.039	42	Vac. - 2	1	FFKM	cab. plug 2506	0.057	–	137 761 V

ETFE Valve Body

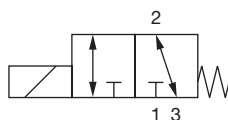
Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
UNF 1/4-28	1.5	0.039	42	Vac. - 2	2	FFKM	cab. plug 2506	0.063	–	137 756 Y

PEEK Valve Body

Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
Sub-base	1.6	0.039	42	Vac. - 2	2	FFKM	cab. plug 2506	0.053	–	137 742 S

Circuit Function T

3/2-way valve, direct acting, universal function, any flow direction



PVDF Valve Body

Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
G 1/8	1.6	0.047	51	Vac. - 2	2	FFKM	leads, 500mm	0.062	–	137 771 X
G 1/8	1.6	0.047	51	Vac. - 2	2	FFKM	rect. plug	0.062	–	139 149 A
G 1/8	1.6	0.047	51	Vac. - 2	2	FFKM	cab. plug 2506	0.062	–	137 769 D 137 770 A
NPT 1/8	1.6	0.047	51	Vac. - 2	2	FFKM	leads, 500mm	0.065	137 774 S	137 775 T
NPT 1/8	1.6	0.047	51	Vac. - 2	2	FFKM	cab. plug 2506	0.065	–	137 772 Y
Tube	1.6	0.025	27	Vac. - 2	1	FFKM	leads, 500mm	0.057	137 782 K	137 783 L
Tube	1.6	0.025	27	Vac. - 2	1	FFKM	rect. plug	0.057	–	139 150 F
Tube	1.6	0.025	27	Vac. - 2	1	FFKM	cab. plug 2506	0.057	137 781 J	137 780 V

ETFE Valve Body

Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
UNF 1/4-28	1.5	0.050	27	Vac. - 2	2	FFKM	leads, 500mm	0.063	137 778 E	137 779 F
UNF 1/4-28	1.5	0.039	42	Vac. - 2	2	FFKM	cab. plug 2506	0.063	–	137 776 U
UNF 1/4-28	1.5	0.039	42	Vac. - 2	2	FFKM	rect. plug	0.063	–	142 864 S

PEEK Valve Body

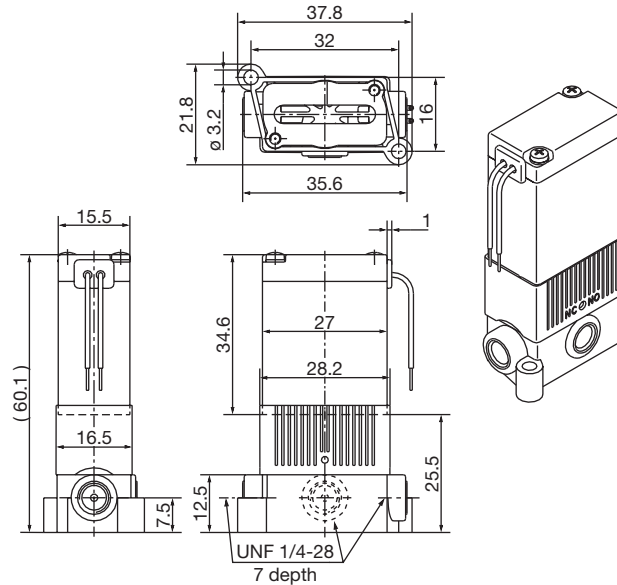
Port connection	Orifice DN [mm]	Kv-Value (water) [m³/h]	Q _{Nn} -Value (air) [l/min]	Pressure range [bar]	Back pressure [bar]	Seal material	Electrical connection	Weight [kg]	Voltage / Frequency [V/Hz]	Item-No. / Frequency [V/Hz]
Sub-base	1.6	0.032	34	Vac. - 2	2	FFKM	leads, 500mm	0.053	137 767 T	137 768 C
Sub-base	1.6	0.032	34	Vac. - 2	2	FFKM	rect. plug	0.053	–	139 148 H
Sub-base	1.6	0.032	34	Vac. - 2	2	FFKM	cab. plug 2506	0.053	137 766 S	137 765 Z

¹⁾ Side tag connector, ²⁾ Top tag connector, universal coil (AC/DC) with integrated rectifier

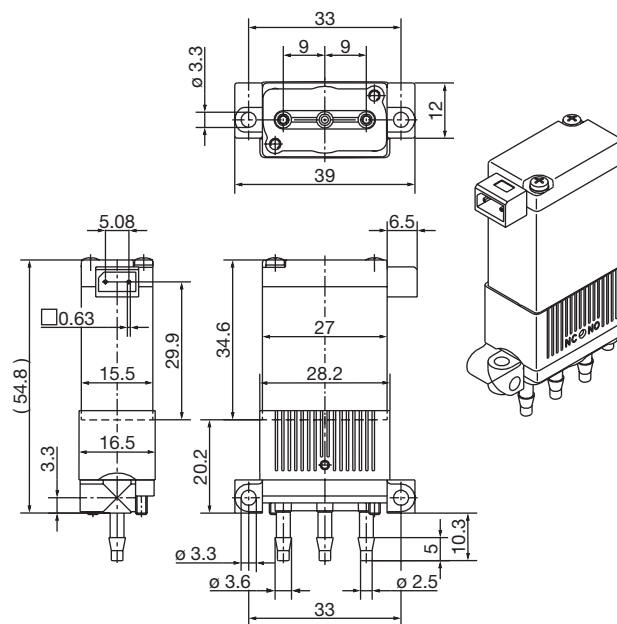
16 mm Miniature Rocker Solenoid Valve with Isolating Diaphragm for Analytical Applications

Analytical Control

UNF 1/4-28 Body with Flying Leads - Dimensions [mm]



Tube Connection Body with Side Plug - Dimensions [mm]



16 mm Miniature Rocker Solenoid Valve with Isolating Diaphragm for Analytical Applications

Type 2505 - Rectangular Cable Plug

Technical Data

Protection class	IP 40
Operating voltage	24 V
Power consumption	3 W
Operating temperature	0-50 °C

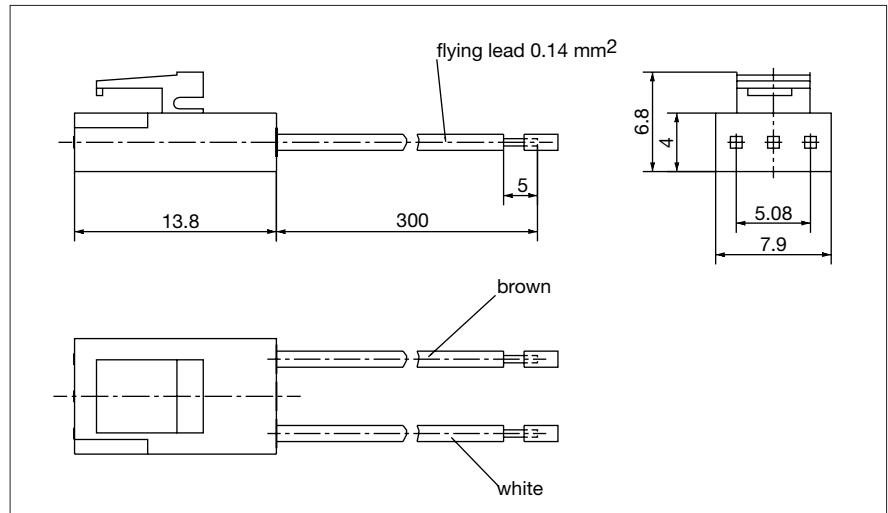
Ordering¹⁾

Item-No.

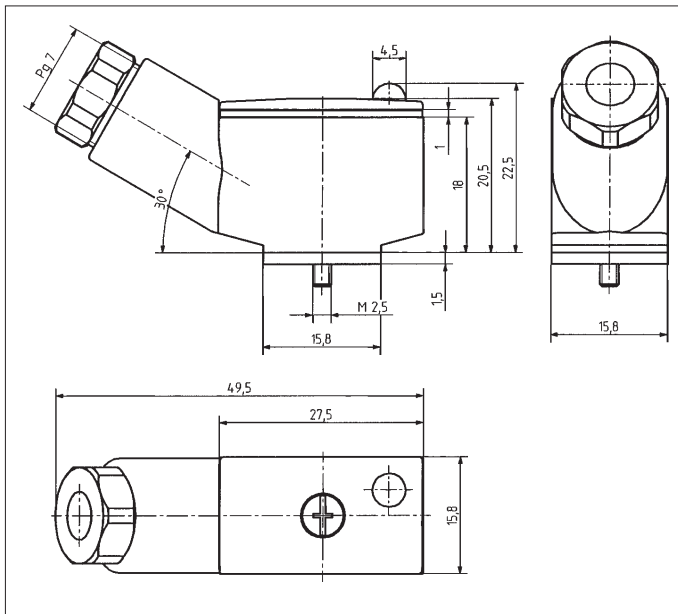
Cable length 300 mm	644 068 N
Cable length 3 m	133 486 F

¹⁾ Please order separately (no standard delivery)

Dimensions [mm]



Type 2506 - Cable Plug DIN 43650, Form C



Technical Data

Body material	PA (polyamide)
Contact material	Brass, electro-silverplated
Isolation between cable plug and coil	Gasket 1.5 mm
Continuous limit temp.	+125 °C
Cable diameter	5-6 mm
Electr. connection	Terminal screws Max. 0.75 mm ²
Poles	2-pole + protective earth
Nominal voltage	0-250 V

Ordering

Item-No.

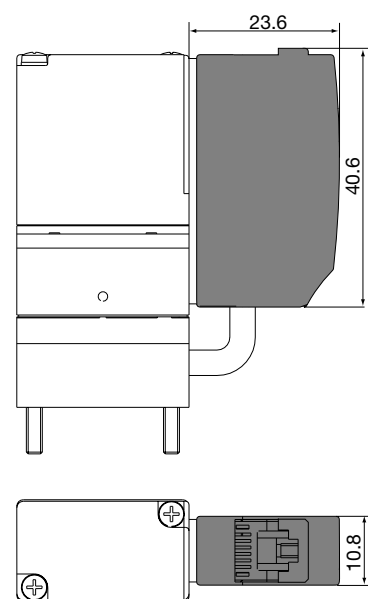
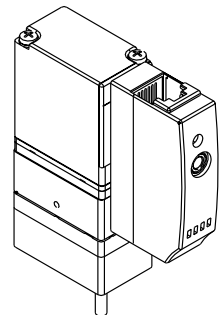
Cable plug 2506	008 353 P ²⁾
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²⁾ Standard delivery with the valve

In case of special application requirements, please consult for advice.

Diagnosis Valve (Available on Request)

- Flow / low flow signal
- Valve position signal
- LEDs and binary outputs
- for 2/2-way and 3/2-way valves



We reserve the right to make technical changes without notice. 902-GB/ 3-0182

Laser Photoelectric Sensor with Built-in Amplifier

E3Z-Laser

Compact photoelectric sensor with LASER light

The E3Z LASER sensor in compact plastic housing features visible LASER light for precision positioning and detection applications.

- Visible LASER light for precision positioning and small object detection
- High power LED for high functional reserve

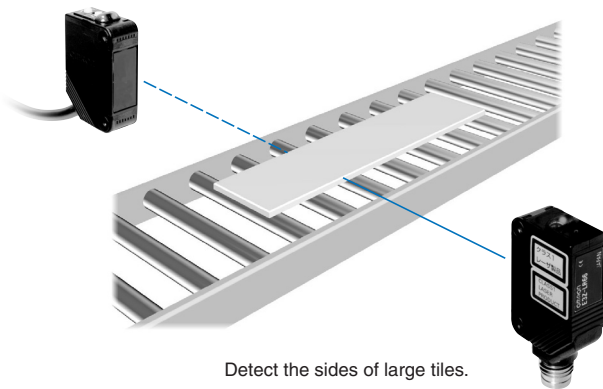


Features

Through-beam and Retroreflective Sensors

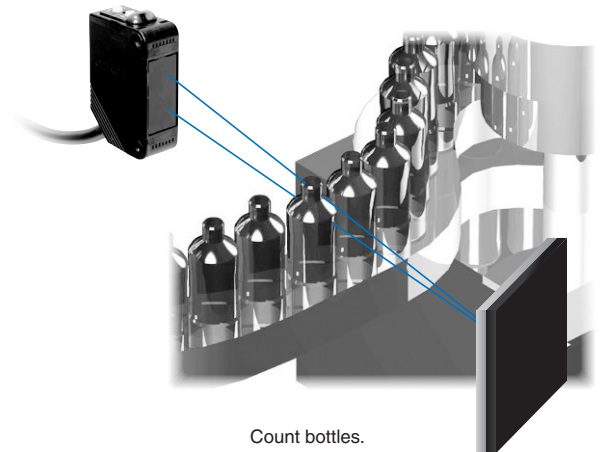
Greatly Enhanced Beam Visibility for Easier Optical Axis Adjustment of Sensors

- The optical design maximizes the linear propagation of laser beams. Red laser beams (class 1) can be precisely aligned on the targeted position.
- The functional reserve of the rated through-beam sensing distance of 60 m provides sufficient allowance, enabling Through-beam Models to be used reliably even in dusty environments.



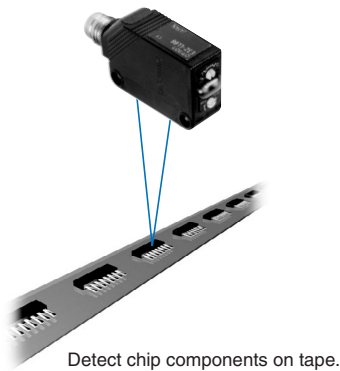
Reliable Detection of Small Objects and Narrow Gaps with the Small Spot

- The spot diameter for Through-beam and Retro-reflective Models is 5 mm (a typical example at 3 m), making it possible to detect small workpieces at long distances.
- The sensing distance for Retro-reflective Models is 15 m (when an E39-R1S Reflector is used). This is the longest leeway in the industry.



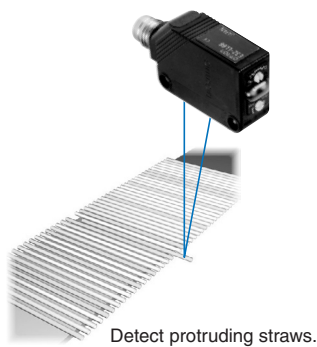
BGS Models

Long-distance Sensing at 300 mm (White Paper)



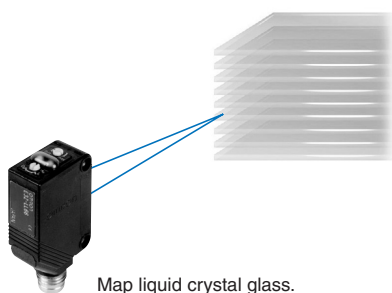
A Low Black/White Error for Applications with Mixed Colors

- A black/white error as low as 5% makes detection and operation more stable.



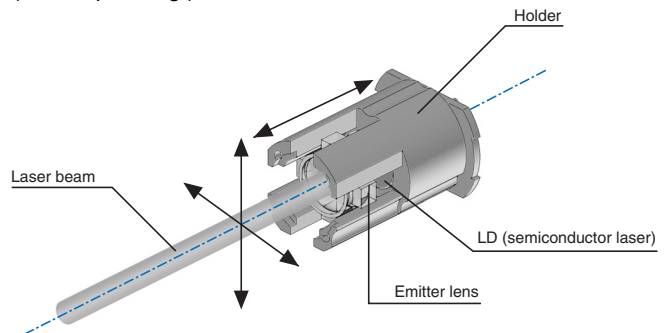
Easy Detection of Small Workpieces and Minor Differences in Levels with the Small Spot

- Stable detection is possible with no influence from a glossy background frame.
- The spot diameter for BGS models is 0.5 mm (typical example at 300 mm). Combined with an hysteresis of only 5%, even minute differences can be detected.
- Models with a response time of 0.5 ms (E3Z-LL□3/□8) are available as standard models for fast-moving objects.



Advanced Optical Technology of the E3Z Laser

Laser beam directional deviation can be suppressed and spot diameters can be freely customized. This is achieved through high-precision alignment technology based on LD and emitter lens modularization. The lens position can be adjusted inline. (Patent pending.)



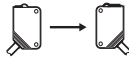

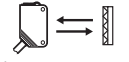
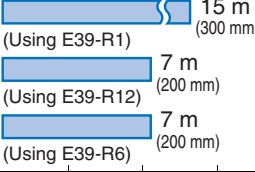
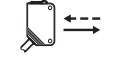
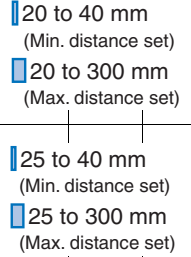
Laser Diagram Conceptual Diagram

By precisely adjusting the emitter lens in the vertical, horizontal, and depth directions, alignment can be achieved with minimal directional deviation (to ± 1 degree).

Ordering Information

Sensors

 Red light

Sensing method	Appearance	Connection method	Response time	Sensing distance		Model		
						NPN output	PNP output	
Through-beam		Pre-wired (2 m)*1	1 ms		*2 60 m	E3Z-LT61	E3Z-LT81	
		Standard M8 Connector				E3Z-LT66	E3Z-LT86	
Retro-reflective with MSR function	 *3	Pre-wired (2 m)*1		1 ms		*4	E3Z-LR61	E3Z-LR81
		Standard M8 Connector					E3Z-LR66	E3Z-LR86
		Standard M8 Connector					E3Z-LR66	E3Z-LR86
Distance-settable (BGS Models)		Pre-wired (2 m)*1		0.5 ms			E3Z-LL61	E3Z-LL81
		Standard M8 Connector					E3Z-LL66	E3Z-LL86
		Pre-wired (2 m)*1					E3Z-LL63	E3Z-LL83
		Standard M8 Connector	E3Z-LL68				E3Z-LL88	

- *1. Pre-wired Models with a 0.5-m cable are also available for these products. When ordering, specify the cable length by adding "0.5M" to the end of the model number (e.g., E3Z-LT61 0.5M).
M12 Pre-wired Connector Models are also available. When ordering, add "-M1J" to the end of the model number (e.g., E3Z-LT61-M1J). The cable is 0.3 m long. The following connection forms are also available. Ask your OMRON representative for details.
Pre-wired Models with 1-m or 5-m cables
Pre-wired Connector Models with M8 4-pin connectors, M8 3-pin connectors.
- *2. Consult with your OMRON representative if a distance of more than 10 m is required. Models with large custom-size spots can be produced. These make optical axis adjustment easier and allow the beam to be received more stably by the Receiver even if vibration is present.
- *3. The Reflector is sold separately. Select the Reflector model most suited to the application.
- *4. Values in parentheses indicate the minimum required distance between the Sensor and Reflector.

Accessories (Order Separately)










Slits (for E3Z-LT□□)

Slit width	Sensing distance	Minimum detectable object (typical)	Model	Contents
0.5 mm dia.	3 m	0.1 mm dia.	E39-S65A	One set (contains Slits for both the Emitter and Receiver)

Reflectors (for E3Z-LR□□)

Name	Sensing distance (typical)	Model	Remarks
Reflector	15 m (300 mm)	E39-R1S	<ul style="list-style-type: none"> • Retro-reflective models are not provided with Reflectors. • Separate the Sensor and the Reflector by at least the distance given in parentheses. • The MSR function is enabled.
	7 m (200 mm)	E39-R12	
	7 m (200 mm)	E39-R6	

Mounting Brackets

Appearance	Model	Quantity	Remarks	Appearance	Model	Quantity	Remarks
	E39-L153	1	Mounting Brackets		E39-L98	1	Metal Protective Cover Bracket *1
	E39-L104	1			E39-L150	1 set	(Sensor adjuster)
	E39-L43	1	Horizontal Mounting Bracket*1		E39-L151	1 set	Easily mounted to the aluminum frame rails of conveyors and easily adjusted. For left to right adjustment
	E39-L142	1	Horizontal Protective Cover Bracket*1				
	E39-L44	1	Rear Mounting Bracket		E39-L144	1	Compact Protective Cover Bracket (For E3Z only) *1

*1. Cannot be used for Standard Connector models.

Note: When using Through-beam models, order one bracket for the Receiver and one for the Emitter.

Sensor I/O Connectors

(Please refer to accessory datasheet E26E-EN-01 for a complete overview of all available sensor connectors)

Size	Cable	Appearance	Cable type	Model
M8	Standard	Straight	2 m	XS3F-M421-402-A
			5 m	XS3F-M421-405-A
		L-shaped	2 m	XS3F-M422-402-A
			5 m	XS3F-M422-405-A
M12 (For -M1J models)		Straight	2 m	XS2F-D421-DC0-A
			5 m	XS2F-D421-GC0-A
		L-shaped	2 m	XS2F-D422-DC0-A
			5 m	XS2F-D422-GC0-A

Ratings and Specifications

Sensing method		Through-beam	Retro-reflective with MSR function	Distance-settable (BGS models)	
Response		Standard response			High-speed response
Item	Model	NPN output	E3Z-LR61/-LR66	E3Z-LL61/-LL66	E3Z-LL63/-LL68
		PNP output	E3Z-LR81/-LR86	E3Z-LL81/-LL86	E3Z-LL83/-LL88
Sensing distance		60 m *1	0.3 to 15 m (when using E39-R1) 0.2 to 7 m (when using E39-R12) 0.2 to 7 m (when using E39-R6)	White paper (100 × 100 mm): 20 to 300 mm Black paper (100 × 100 mm): 20 to 160 mm	White paper (100 × 100 mm): 25 to 300 mm Black paper (100 × 100 mm): 25 to 100 mm
Set distance range		---		White paper (100 × 100 mm): 40 to 300 mm Black paper (100 × 100 mm): 40 to 160 mm	White paper (100 × 100 mm): 40 to 300 mm Black paper (100 × 100 mm): 40 to 100 mm
Spot diameter (typical)		5 mm dia. at 3 m		0.5 mm dia. at 300 mm	
Standard sensing object		Opaque: 12 mm dia. min.	Opaque: 75 mm dia. min.	---	
Minimum detectable object (typical)		6 mm dia. opaque object at 3 m		0.2 mm dia. stainless-steel pin gauge at 300 mm	
Differential travel		---		5% max. of set distance	
Black/white error		---		5% at 160 mm	5% at 100 mm
Directional angle		Receiver: 3 to 15°	---		
Light source (wavelength)		Red LED (655 nm), JIS CClass 1, IEC Class 1, FDA Class II			
Power supply voltage		12 to 24 VDC±10%, ripple (p-p): 10% max.			
Current consumption		Emitter: 15 mA Receiver: 20 mA	30 mA max.		
Control output		Load power supply voltage: 26.4 VDC max., Load current: 100 mA max., Open collector output			
Residual output voltage		Load current of less than 10 mA: 1 V max. Load current of 10 to 100 mA: 2 V max.			
Output mode switching		Switch to change between light-ON and dark-ON			
Protection circuits		Reversed power supply polarity protection, Output short-circuit protection, and Reversed output polarity protection	Reversed power supply polarity protection, Output short-circuit protection, Mutual interference prevention, and Reversed output polarity protection		
Response time		Operate or reset: 1 ms max.			Operate or reset: 0.5 ms max.
Sensitivity adjustment		One-turn adjuster		Five-turn endless adjuster	
Ambient illumination (Receiver side)		Incandescent lamp: 3,000 lx max. Sunlight: 10,000 lx max.			
Ambient temperature range		Operating: -10 to 55 °C, Storage: -25 to 70 °C (with no icing or condensation)			
Ambient humidity range		Operating: 35% to 85%, Storage: 35% to 95% (with no icing or condensation)			
Insulation resistance		20 MΩ min. at 500 VDC			
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min			
Vibration resistance		Destruction: 10 to 55 Hz, 1.5 mm double amplitude for 2 hours each in X, Y, and Z directions			
Shock resistance		Destruction: 500 m/s ² 3 times each in X, Y, and Z directions			
Degree of protection		IP67 (IEC 60529)			
Connection method		Pre-wired cable (standard length: 2 m): E3Z-L□□1/-L□□3 Standard M8 Connector: E3Z-L□□6/-L□□8			
Indicator		Operation indicator (orange) Stability indicator (green) Emitter for Through-beam Models has power indicator (orange) only.			

Sensing method		Through-beam	Retro-reflective with MSR function	Distance-settable (BGS models)		
Response		Standard response			High-speed response	
Item	Model	NPN output	E3Z-LT61/-LT66	E3Z-LR61/-LR66	E3Z-LL61/-LL66	E3Z-LL63/-LL68
		PNP output	E3Z-LT81/-LT86	E3Z-LR81/-LR86	E3Z-LL81/-LL86	E3Z-LL83/-LL88
Weight (packed state)	Pre-wired cable (2 m)	Approx. 120 g	Approx. 65 g			
	Standard Connector	Approx. 30 g	Approx. 20 g			
Material	Case	PBT (polybutylene terephthalate)				
	Lens	Modified polyarylate resin	Methacrylic resin	Modified polyarylate resin		
Accessories		Instruction manual (Neither Reflectors nor Mounting Brackets are provided with any of the above models.)				

*1. Consult with your OMRON representative if a distance of more than 10 m is required. Models with large custom-size spots can be produced. These make optical axis adjustment easier and allow the beam to be received more stably by the Receiver even if vibration is present.

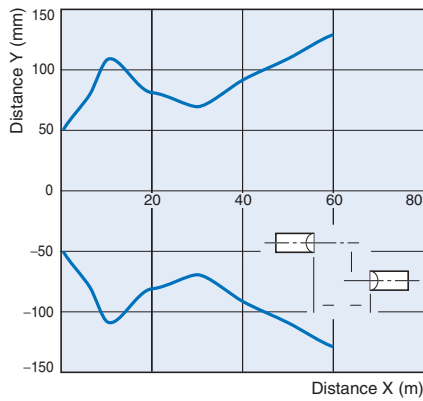
Note: An emission stop function can be added to Through-beam Models as a custom function. Ask your OMRON representative for details.

Engineering Data (Typical)

Parallel Operating Range

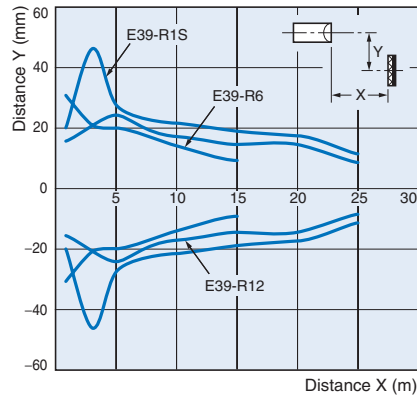
Through-beam Models

E3Z-LT□□



Retro-reflective Models for transparent objects

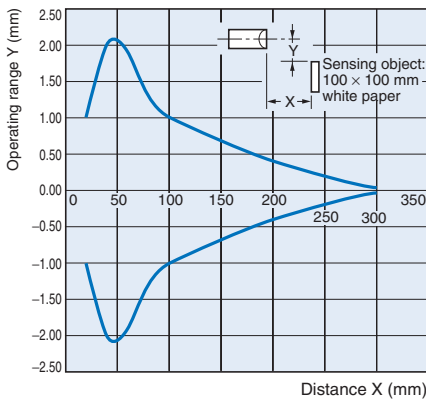
E3Z-LR□□



Operating Range at a Set Distance of 300 mm

BGS Models

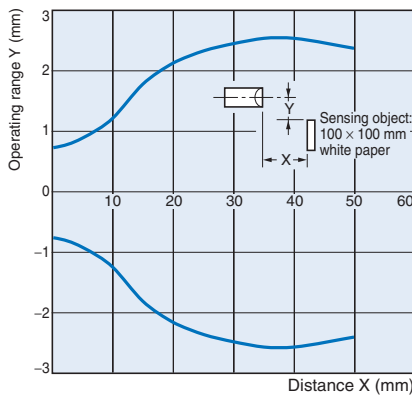
E3Z-LL□□



Operating Range at a Set Distance of 40 mm

BGS Models

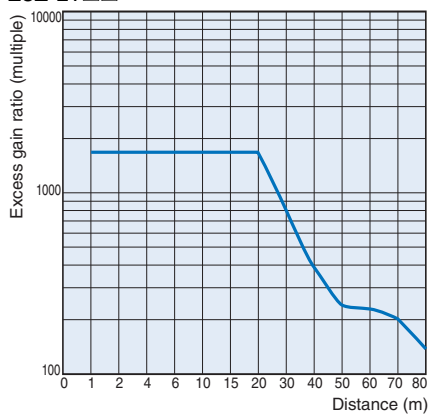
E3Z-LL□□



Excess Gain vs. Set Distance

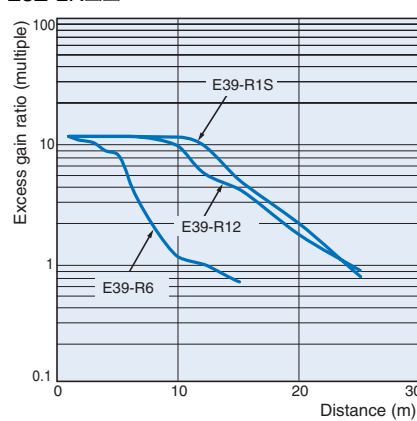
Through-beam Models

E3Z-LT□□



Retro-reflective Models

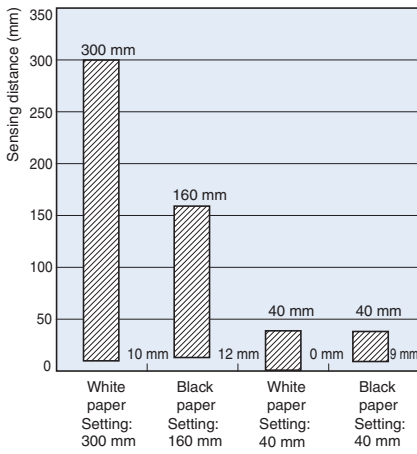
E3Z-LR□□



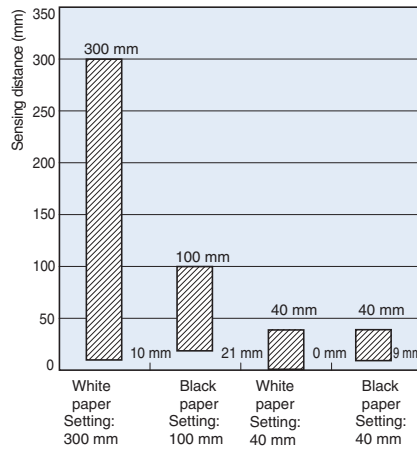
Close Range Characteristics

BGS Models

E3Z-LL□1/-LL□6



E3Z-LL□3/-LL□8

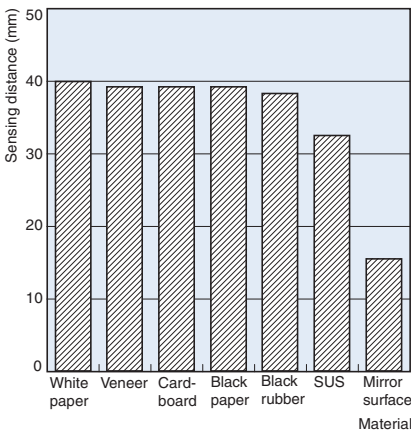


Sensing Distance vs. Sensing Object Material

BGS Models

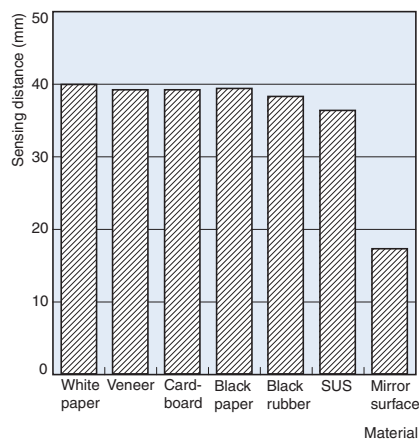
E3Z-LL□1/-LL□6

White Paper with a Set Distance of 40 mm



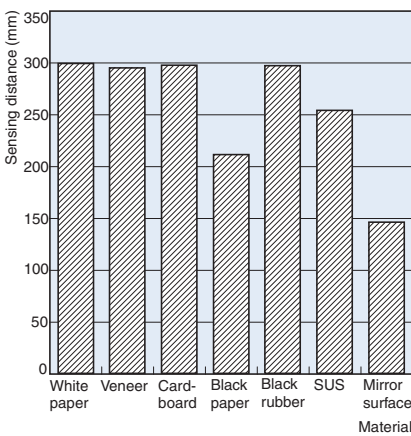
E3Z-LL□3/-LL□8

White Paper with a Set Distance of 40 mm



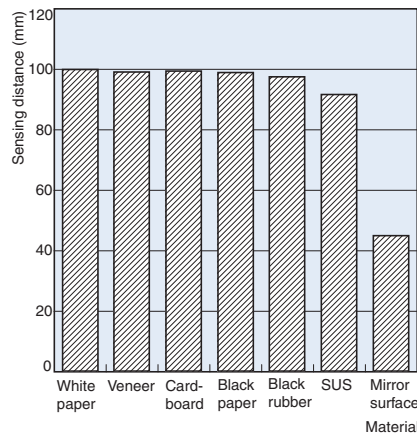
E3Z-LL□1/-LL□6

White Paper with a Set Distance of 300 mm



E3Z-LL□3/-LL□8

White Paper with a Set Distance of 100 mm

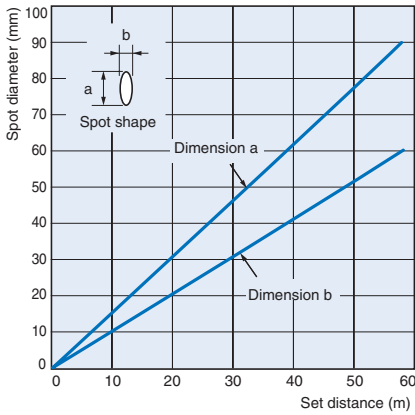


Emission Spot Diameter vs. Distance

Through-beam and Retro-reflective Models
(Same for All Models)

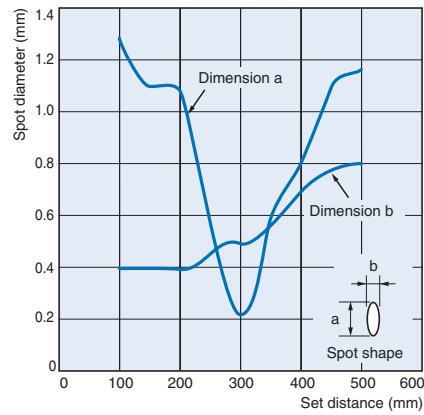
E3Z-LT□□

E3Z-LR□□



BGS Models (Same for All Models)

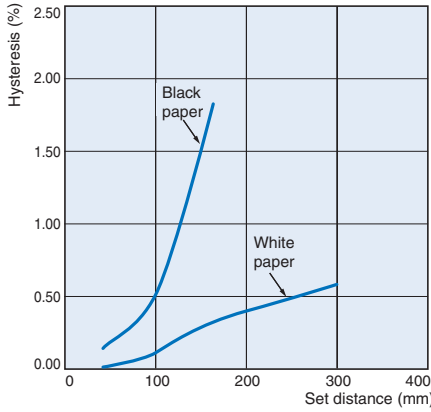
E3Z-LL□□



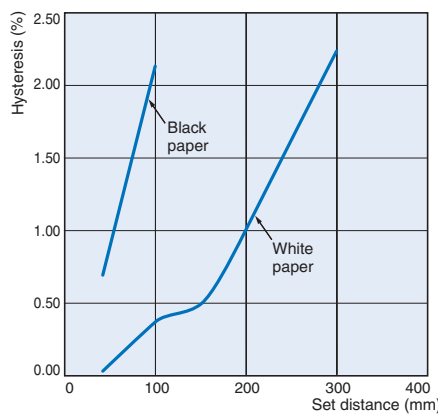
Error vs. Distance

BGS Models

E3Z-LL□1(LL□6)



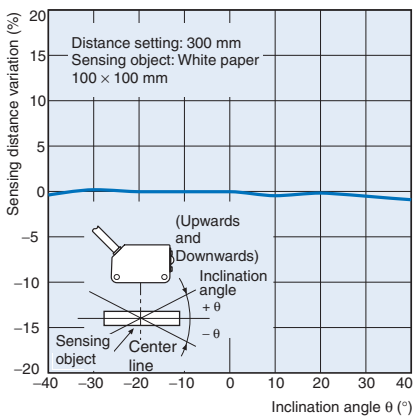
E3Z-LL□3(LL□8)



Angle Characteristics (Vertical)

BGS Models

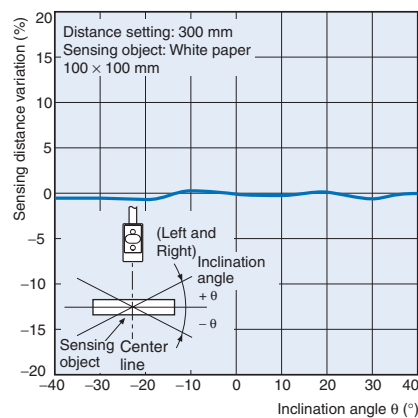
E3Z-LL□



Angle Characteristics (Vertical)

BGS Models

E3Z-LL□



I/O Circuit Diagrams

NPN output

Model	Operation mode	Timing charts	Mode selector switch	Output circuit
E3Z-LT61 E3Z-LT66 E3Z-LR61 E3Z-LR66	Light ON		L side (LIGHT ON)	
	Dark ON		D side (DARK ON)	
E3Z-LL61 E3Z-LL66 E3Z-LL63 E3Z-LL68	Light ON		L side (LIGHT ON)	
	Dark ON		D side (DARK ON)	

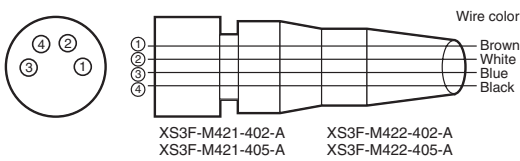
PNP output

Model	Operation mode	Timing chart	Mode selector switch	Output circuit
E3Z-LT81 E3Z-LT86 E3Z-LR81 E3Z-LR86	Light ON		L side (LIGHT ON)	
	Dark ON		D side (DARK ON)	

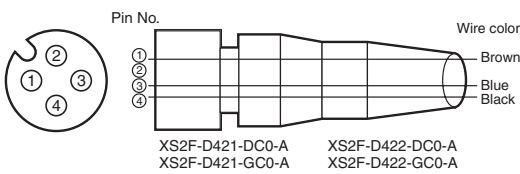
Model	Operation mode	Timing chart	Mode selector switch	Output circuit
E3Z-LL81 E3Z-LL86 E3Z-LL83 E3Z-LL88	Light ON		L side (LIGHT ON)	
	Dark ON		D side (DARK ON)	

Plugs (Sensor I/O Connectors)

M8 4-pin Connectors



M12 Connectors



Nomenclature

Sensors with Sensitivity Adjustment and Mode Selector Switch

Through-beam Models

E3Z-LT□□ (Receiver)

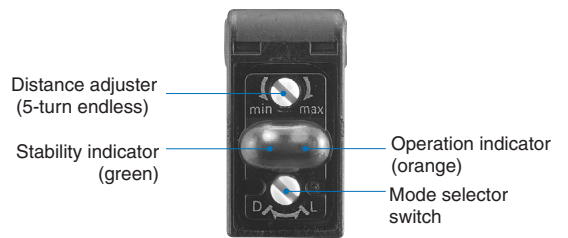
Retro-reflective Models



Distance-settable Sensor

BGS Models

E3Z-LL□□



Safety Precautions

Refer to *Warranty and Limitations of Liability* on page 20.

Warning

This product is not designed or rated for ensuring safety of persons. Do not use it for such purpose.



To ensure safe use of laser products, do not allow the laser beam to enter your eye. Direct exposure may adversely affect your eyesight.



Caution

Do not connect an AC power supply to the Sensor. If AC power (100 VAC or more) is supplied to the Sensor, it may explode or burn.



Precautions for Safe Use

Be sure to abide by the following precautions for the safe operation of the Sensor.

Operating Environment

Do not use the Sensor in locations with explosive or flammable gas.

Wiring

Power Supply Voltage and Output Load Power Supply Voltage

Make sure that the power supply to the Sensor is within the rated voltage range. If a voltage exceeding the rated voltage range is supplied to the Sensor, it may explode or burn.

Power Supply Voltage

The maximum power supply voltage is 26.4 VDC. Applying a voltage exceeding the rated range may damage the Sensor or cause burning.

Load

Do not use a load that exceeds the rated load.

Load Short-circuiting

Do not short-circuit the load, otherwise the Sensor may be damaged or it may burn.

Connection without Load

Do not connect the power supply to the Sensor with no load connected, otherwise the internal elements may explode or burn. Always connect a load when wiring.

Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

Usage Environment

Water Resistance

The Sensor is rated IP67. Do not use it in water, in the rain, or outdoors.

Ambient Environment

Do not install the product in the following locations. Doing so may result in product failure or malfunction.

- Locations subject to excess dust and dirt
- Locations subject to direct sunlight
- Locations subject to corrosive gas
- Locations subject to organic solvents
- Locations subject to shock or vibration
- Locations subject to exposure to water, oil, or chemicals
- Locations subject to high humidity or condensation

Designing

Power Reset Time

The Sensor is ready to operate 100 ms after the Sensor is turned ON. If the load and Sensor are connected to independent power supplies respectively, be sure to turn ON the Sensor before supplying power to the load.

Wiring

Avoiding Malfunctions

If using the Sensor with an inverter or servomotor, always ground the FG (frame ground) and G (ground) terminals, otherwise the Sensor may malfunction.

Mounting

Mounting the Sensor

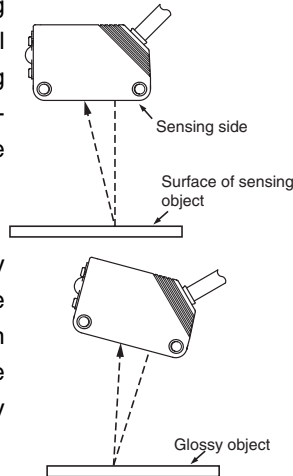
- If Sensors are mounted face-to-face, make sure that the optical axes are not in opposition to each other. Otherwise, mutual interference may result.
- Always install the Sensor carefully so that the aperture angle range of the Sensor will not cause it to be directly exposed to intensive light, such as sunlight, fluorescent light, or incandescent light.
- Do not strike the Photoelectric Sensor with a hammer or any other tool during the installation of the Sensor, or the Sensor will lose its water-resistive properties.
- Use M3 screws to mount the Sensor.
- When mounting the case, make sure that the tightening torque applied to each screw does not exceed 0.54 N·m.

Metal Connectors

- Always turn OFF the power supply to the Sensor before connecting or disconnecting the metal connector.
- Hold the connector cover to connect or disconnect it.
- Secure the connector cover by hand. Do not use pliers, otherwise the connector may be damaged.
- Use a tightening torque of 0.3 to 0.4 N·m for M8 connectors and 0.4 to 0.5 N·m for M12 connectors. Vibration may cause the connectors to become loose and reduce the degree of protection if the tightening torque is not sufficient.

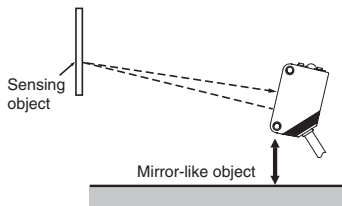
Mounting Direction for Distance-settable Models

- Make sure that the sensing side of the Sensor is parallel with the surface of the sensing objects. Normally, do not incline the Sensor towards the sensing object.

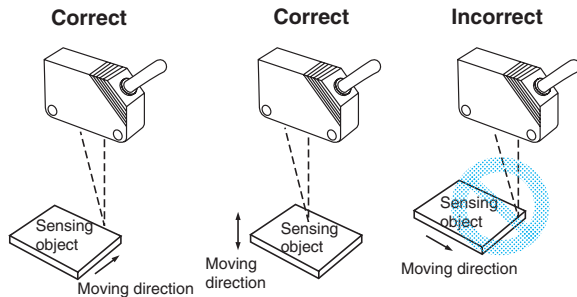


If the sensing object has a glossy surface, however, incline the Sensor by 5° to 10° as shown in the illustration, provided that the Sensor is not influenced by background objects.

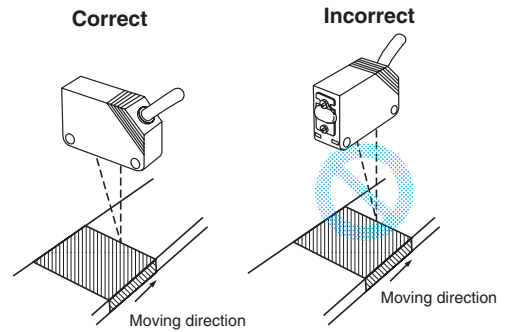
- If there is a mirror-like object below the Sensor, the Sensor may not operate stably. Therefore, incline the Sensor or separate the Sensor from the mirror-like object as shown below.



- Do not install the Sensor in the wrong direction. Refer to the following illustration.

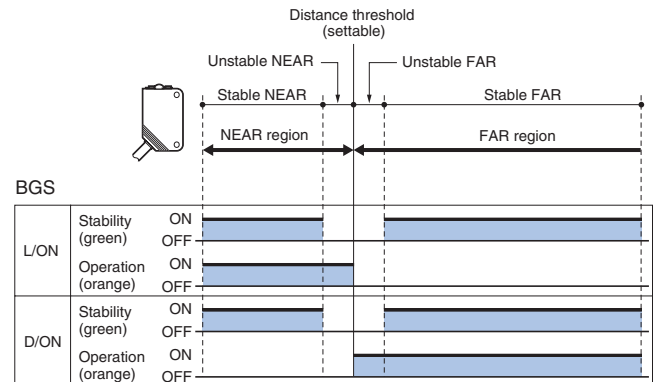


Install the Sensor as shown in the following illustration if each sensing object greatly differs in color or material.



Adjusting Distance-settable Models

Indicator Operation



Note: If the stability indicator is lit, the detection/no detection status is stable within the rated ambient operating temperature (-10 to 55°C).

Inspection and Maintenance

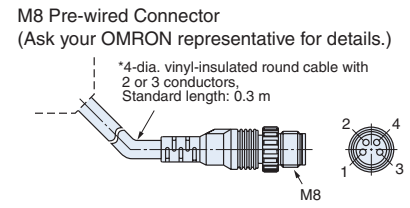
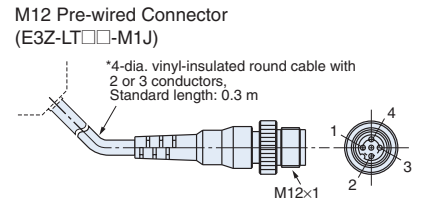
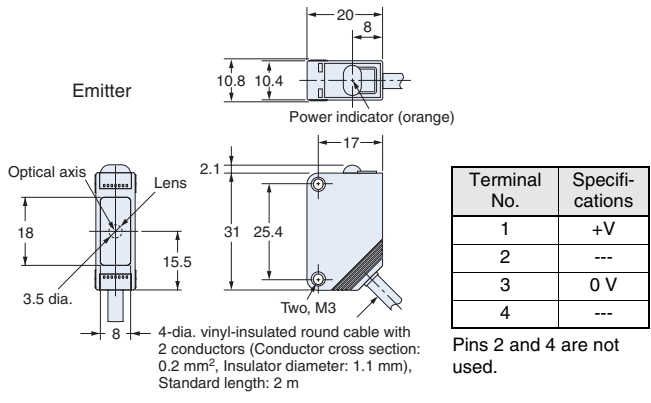
Cleaning

Never use paint thinners or other organic solvents to clean the surface of the product.

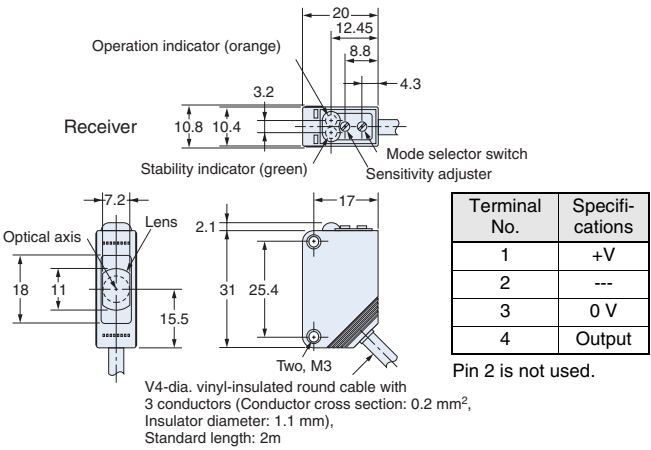
Dimensions (Unit: mm)

Sensors

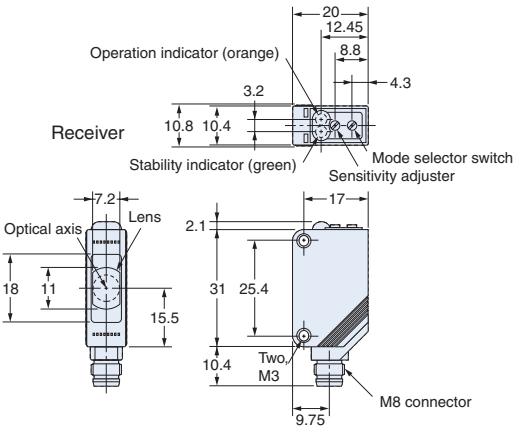
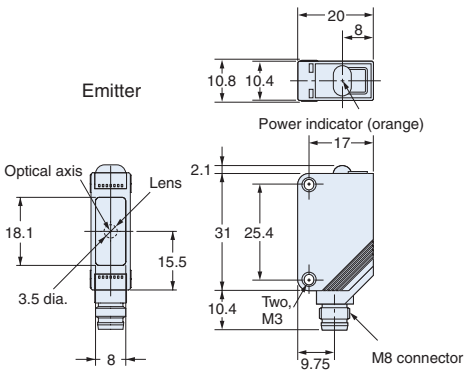
Through-beam
Pre-wired Models
E3Z-LT61
E3Z-LT81



* The Emitter cable has two conductors and the Receiver cable has three conductors.



Through-beam
Standard Connector
Models
E3Z-LT66
E3Z-LT86

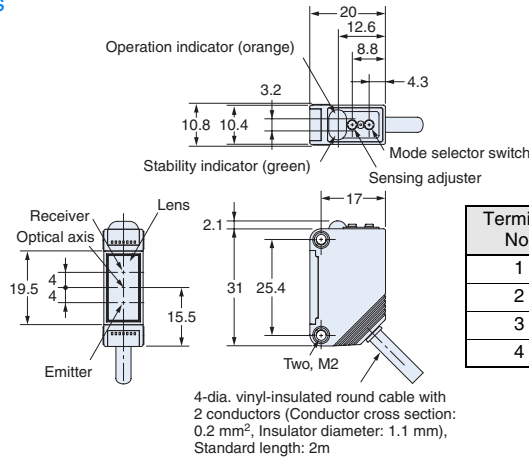


Retro-reflective Models

Pre-wired Models

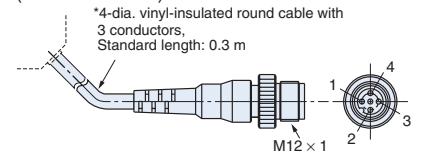
E3Z-LR61

E3Z-LR81

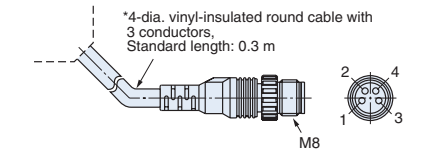


Terminal No.	Specifications
1	+V
2	---
3	0 V
4	Output

M12 Pre-wired Connector (E3Z-LR□□-M1J)



M8 Pre-wired Connector (Ask your OMRON representative for details.)

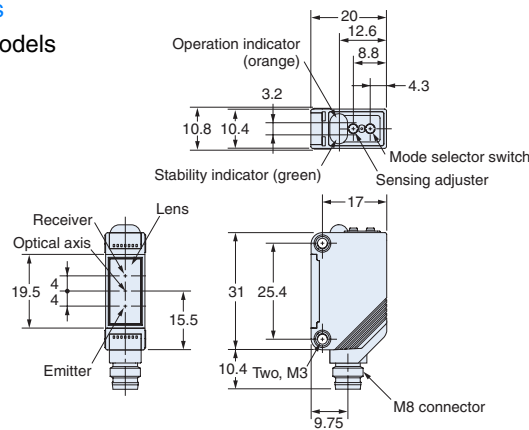


Retro-reflective Models

Standard Connector Models

E3Z-LR66

E3Z-LR86



BGS Models

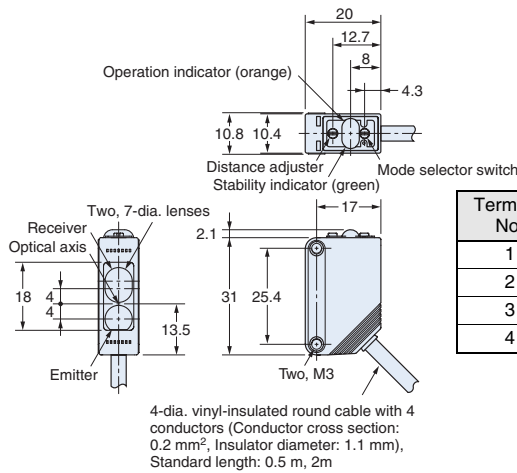
Pre-wired Models

E3Z-LL61

E3Z-LL81

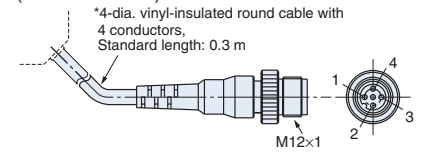
E3Z-LL63

E3Z-LL83

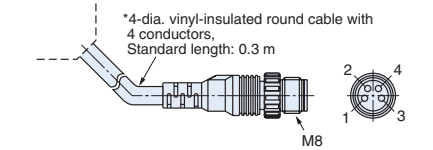


Terminal No.	Specifications
1	+V
2	---
3	0 V
4	Output

M12 Pre-wired Connector (E3Z-LL□□-M1J)



M8 Pre-wired Connector (Ask your OMRON representative for details.)



BGS Models

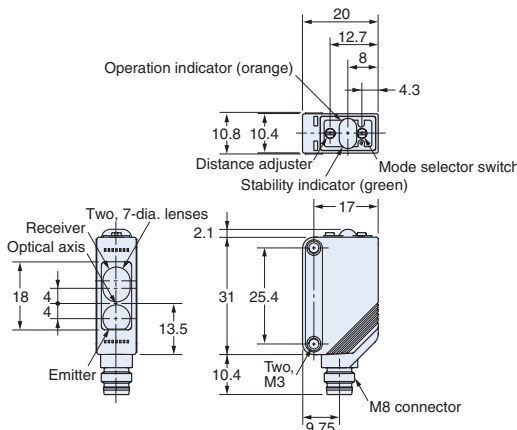
Standard M8 Connector Models

E3Z-LL66

E3Z-LL86

E3Z-LL68

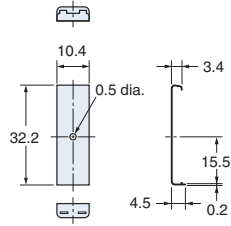
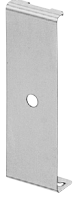
E3Z-LL88



Accessories (Order Separately)

Slit

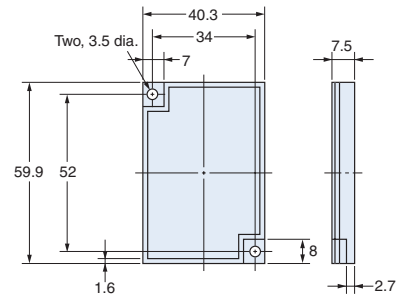
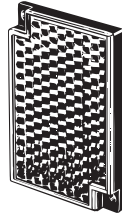
E39-S65A



Material
SUS301 stainless steel

Reflector

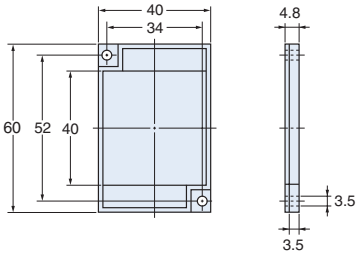
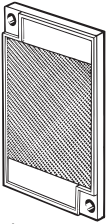
E39-R1S



Materials
Reflective surface: Acrylic
Rear surface: ABS

Reflector

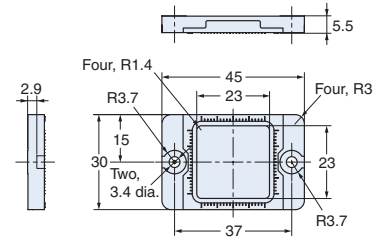
E39-R6



Materials
Reflective surface: Acrylic
Rear surface: ABS

Reflector

E39-R12



WARRANTY

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- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

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It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the product may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

ERRORS AND OMISSIONS

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OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Cat. No. E368-E2-01-X

In the interest of product improvement, specifications are subject to change without notice.

OMRON EUROPE B.V.

Wegalaan 67-69,
NL-2132 JD, Hoofddorp,
The Netherlands
Phone: +31 23 568 13 00
Fax: +31 23 568 13 88
www.eu.omron.com



Model Number

UB400-12GM-I-V1

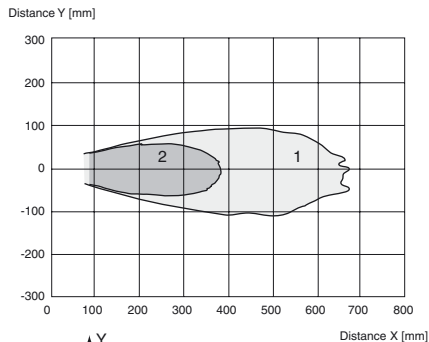
Single head system

Features

- Analog output 4 mA ... 20 mA
- Measuring window adjustable
- Program input
- Temperature compensation

Diagrams

Characteristic response curve



Curve 1: flat surface 100 mm x 100 mm
Curve 2: round bar, Ø 25 mm

Technical data

General specifications

Sensing range	30 ... 400 mm
Adjustment range	50 ... 400 mm
Unusable area	0 ... 30 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 310 kHz
Response delay	approx. 50 ms

Indicators/operating means

LED yellow	solid yellow: object in the evaluation range yellow, flashing: program function, object detected
LED red	solid red: Error red, flashing: program function, object not detected

Electrical specifications

Operating voltage U_B	10 ... 30 V DC, ripple 10 % _{SS}
No-load supply current I_0	≤ 30 mA

Input

Input type	1 program input lower evaluation limit A1: $-U_B ... +1$ V, upper evaluation limit A2: $+4$ V ... $+U_B$ input impedance: > 4.7 kΩ, pulse duration: ≥ 1 s
------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------

Output

Output type	1 analog output 4 ... 20 mA
Resolution	0.17 mm

Deviation of the characteristic curve	± 1 % of full-scale value
Repeat accuracy	± 0.5 % of full-scale value
Load impedance	0 ... 300 Ω at $U_B > 10$ V; 0 ... 500 Ω at $U_B > 15$ V
Temperature influence	± 1.5 % of full-scale value

Ambient conditions

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

Mechanical specifications

Connection type	Connector M12 x 1, 4-pin
Protection degree	IP67
Material	
Housing	brass, nickel-plated
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Mass	25 g

Compliance with standards and directives

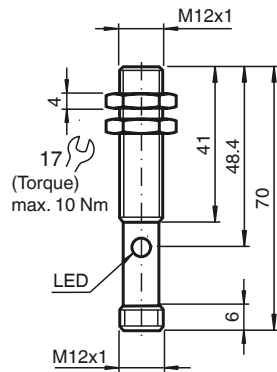
Standard conformity	
Standards	EN 60947-5-7:2003 IEC 60947-5-7:2003 EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated ≤36 V

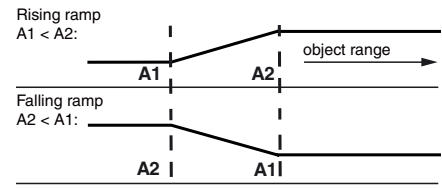
Release date: 2013-02-04 09:44 Date of issue: 2013-10-25 120342_eng.xml

Dimensions



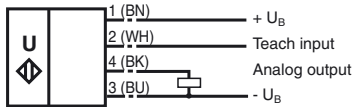
Additional Information

Programmed analogue output function



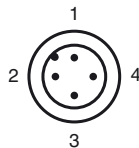
Electrical Connection

Standard symbol/Connections:
(version I)



Core colors in accordance with EN 60947-5-2.

Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Release date: 2013-02-04 09:44 Date of issue: 2013-10-25 120342_eng.xml

Accessories

UB-PROG2

Programming unit

BF 5-30

Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm

BF 12

Mounting flange, 12 mm

BF 12-F

Mounting flange with dead stop, 12 mm

V1-G-2M-PVC

Female cordset, M12, 4-pin, PVC cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

UVW90-M12

Ultrasonic -deflector

Adjusting the evaluation limits

The ultrasonic sensor features an analogue output with two teachable evaluation limits. These are set by applying the supply voltage $-U_B$ or $+U_B$ to the TEACH-IN input. The supply voltage must be applied to the TEACH-IN input for at least 1 s. LEDs indicate whether the sensor has recognised the target during the TEACH-IN procedure. The lower evaluation limit A1 is taught with $-U_B$, A2 with $+U_B$.

Two different output functions can be set:

1. Analogue value increases with rising distance to object (rising ramp)
2. Analogue value falls with rising distance to object (falling ramp)

TEACH-IN rising ramp (A2 > A1)

- Position object at lower evaluation limit
- TEACH-IN lower limit A1 with $-U_B$
- Position object at upper evaluation limit
- TEACH-IN upper limit A2 with $+U_B$

TEACH-IN falling ramp (A1 > A2):

- Position object at lower evaluation limit
- TEACH-IN lower limit A2 with $+U_B$
- Position object at upper evaluation limit
- TEACH-IN upper limit A1 with $-U_B$

Default setting

A1: unusable area
 A2: nominal sensing range
 Mode of operation: rising ramp

LED Displays

Displays in dependence on operating mode	Red LED	Yellow LED
TEACH-IN evaluation limit		
Object detected	off	flashes
No object detected	flashes	off
Object uncertain (TEACH-IN invalid)	on	off
Normal mode (evaluation range)	off	on
Fault	on	previous state

Installation conditions

If the sensor is installed at places, where the environment temperature can fall below 0 °C, for the sensors fixation, one of the mounting flanges BF 12, BF 12-F or BF 5-30 must be used. In case of direct mounting of the sensor in a through hole, it has to be fixed at the middle of the housing thread.

Release date: 2013-02-04 09:44 Date of issue: 2013-10-25 120342_eng.xml

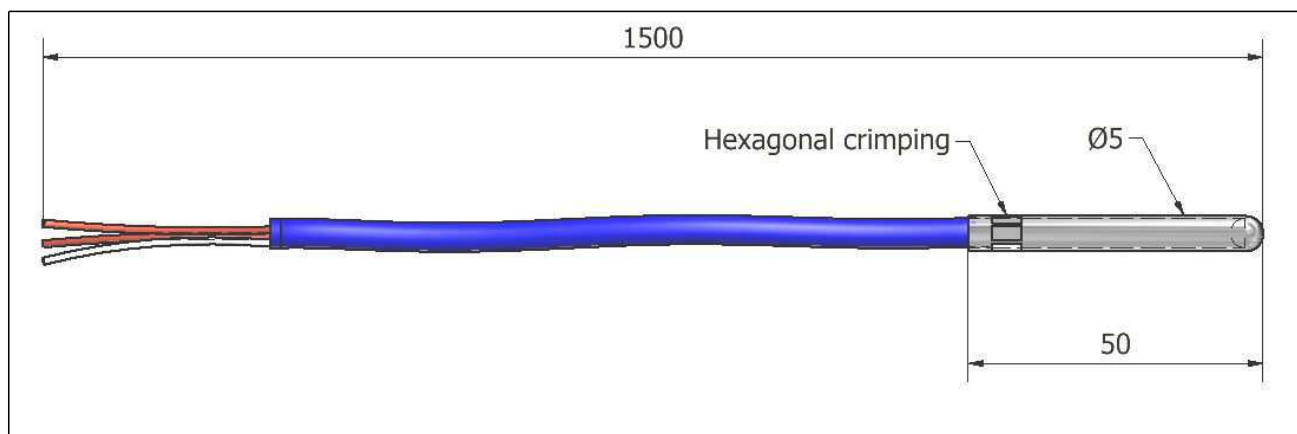


Data sheet PS

ENGLISH

RS Stock No. 896-8395

RS Stock No. 896-8395



RTD $\varnothing 5 \times 50$. Pt100 . 3 wires . Length 1.5m

RANGE :

-20°C / +100°C

USE :

Universal

KEY POINT :

Flexible

SPECIFICATIONS:

PT100 Ω thermic element A Class – 1x3 wires

Tip protector in SS304L

Cable 3 conductors, isolated PVC/PVC

Hexagonal crimping

DIMENSIONS:

Tip protector length = 50mm

Tip protector diameter = 5mm

Total length (tip + cable) = 1500mm

METROLOGICAL DATA :

As per IEC 751

Standard tolerance PT100 A class $\pm 0.15 + 0.002 \cdot [t^{\circ}C]$



ENGLISH

Datasheet

Stock No: 258-2324

RS Pro 7094851 Analogue Positive Pressure Gauge Bottom Entry 3bar, Connection Size G 1/2



Product Details

100mm Diameter Pressure and Vacuum Gauges - Stainless Steel Construction

Suitable for corrosive environments and gaseous or liquid media that will not destruct the pressure system

Laminated Safety Glass Window

316TI Stainless Steel Element & Movement

304 stainless Steel case with G 1/2 in. BSPM connection

Bottom entry connection

Ambient Operating Temperature between -20 and +60°C

Operating Temperature (Medium) +100°C

1.6 Per DIN 16005 Accuracy Class



ENGLISH

Specifications:

Minimum Pressure Measurement	-1bar
Maximum Pressure Measurement	3bar
Pressure Gauge Type	Bottom Entry
Gauge Outside Diameter	100mm
Connection Size	G 1/2
Case Material	Stainless Steel
Minimum Operating Temperature	-20°C
Maximum Operating Temperature	+60°C

ELS-900—Our Smallest Optic Yet. Handles Temperatures to 257°F!

The smallest electro optic sensor in our arsenal, the ELS-900 also carries the highest temperature capability of any of our optic sensors. Its Polyethersulfone housing extends this sensor's compatibility and is very affordable in high volumes. Excellent for industrial OEMs preferring optics with high temperature and small space requirements.

Typical Applications

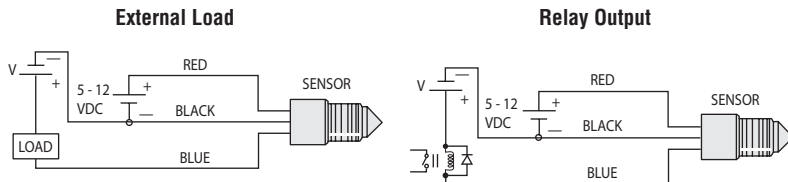
- Coolant reservoir monitoring and warning
- Medical diagnostic, sterilizer, washers and dialysis equipment
- Low lubricant warning on machine tools, generator sets, on- or off-highway vehicles
- Low level warning in hydraulic reservoirs
- Plastic over flow bottles, plastic radiators

Specifications

Materials	
Housing	Polyethersulfone
O-Ring	Viton® (1/2" SAE #5 and M12x1-8)
Operating Pressure	0 to 250 PSI (17 bar), Maximum
Operating Temperature*	-40°F to +257°F (-40°C +125°C)
Current Consumption	4 mA, for 5 Vdc (No Load) 10 mA for 12 Vdc (No Load)
Output	May Sink 40 mA. max., up to 30 VDC
Repeatability	±1 mm
EMI	CE approved per EN 61000
Shock Tested	Per MIL-Std-202 Method 204
Vibration Tested	Per MIL-Std-202 Method 213B

* These switches are not for use in freezing liquids

Wiring Diagrams



How To Order

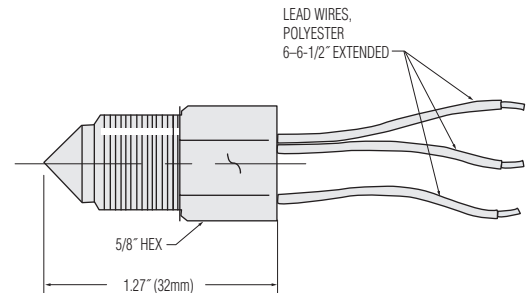
Specify Part Number based on Input and Output Condition required.

Input Power	Condition	1/4" NPT	1/2"-20 SAE #5	M12x1-8
5 V	Wet	207200 ⚡	208993	208997
	Dry	207300 ⚡	208994	208998
12 V	Wet	205200 ⚡	208991	208995
	Dry	205300 ⚡	208992	208996

⚡ – Stock Items.



Dimensions



Extended Power and Switching Capabilities of 12 VDC Models with Gems.

Converts TTL output signal to 5 Amp relay output. Available as open circuit board or mounted in a NEMA 4X enclosure (pictured). See Page A-35.



Manómetro con muelle tubular Modelo 111.12, conexión dorsal Versión estándar

Hoja técnica WIKA PM 01.09

Aplicaciones

- Para medios gaseosos, líquidos, no viscosos y no cristalizantes, compatibles con aleaciones de cobre
- Neumática
- Técnica del clima y calefacción
- Mini-compresores
- Técnica sanitaria

Características

- Fiable y económico
- Ejecución según EN 837-1
- Diámetro nominal 40, 50, 63, 80 y 100
- Rangos de indicación hasta 0 ... 400 bar



Manómetro con muelle tubular modelo 111.12

Descripción

Versión
EN 837-1

Diámetro nominal en mm
40, 50, 63, 80 y 100

Clase de precisión
2,5

Rangos de indicación
0 ... 0,6 a 0 ... 400 bar
así como todas las gamas correspondientes para presión negativa y sobrepresión negativa y positiva.

Carga máx.
Carga estática: 3/4 x valor final de escala
Carga dinámica: 2/3 x valor final de escala
Carga puntual: Valor final de escala

Temperatura admisible

Ambiente: -40 ... +60 °C
Medio: +60 °C máxima

Influencia de temperatura

En caso de desviación de la temperatura de referencia en el sistema de medición (+20 °C): máx. $\pm 0,4 \%$ /10 K de la gama de indicación

Versión estándar

Conexión de proceso

Aleación de cobre, conexión dorsal céntrica
DN 40: Rosca hembra G 1/8 B, llave 14
DN 50, 63: Rosca hembra G 1/4 B, llave 14
DN 80, 100: Rosca hembra G 1/4 B, llave 14

Elemento de medición

Aleación de cobre,
≤ 60 bar: forma circular
> 60 bar: forma helicoidal

Mecanismo

Aleación de cobre

Esfera

DN 40, 50, 63: plástico, blanco, con tope
DN 80, 100: Aluminio, blanco, con tope
Subdivisión negra

Aguja

Plástico, negro

Caja

Plástico, negro
DN 100: Acero, negro

Mirilla

Plástico, transparente, apretada en la caja

Opciones

- Clase de precisión 1,6
- Caja acero, negro
- Aro tipo coche con brida de fijación

Ejecuciones especiales

Para sistemas cerrados de calefacción

DN 63, 80

Con aguja de marcaje roja y sector verde ajustable, rango de indicación 0 ... 4 bar, marca roja en 2,5 ó 3 bar

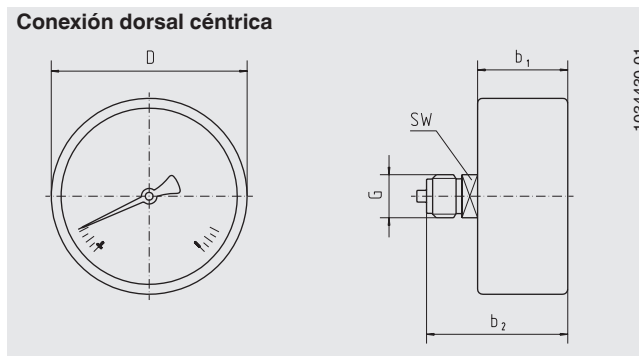
Para la indicación del nivel de agua (hidrómetro)

DN 80

Rangos de indicación 0 ... 0,6 hasta 0 ... 40 bar, con segunda escala en mc.a

Dimensiones en mm

Versión estándar



DN	Dimensiones en mm			Peso en kg		
	$b_1 \pm 0,5$	$b_2 \pm 1$	D	G	Ancho de llave	
40	26	42	39	G 1/8 B	14	0,06
50	29,5	47,5	49	G 1/4 B	14	0,07
63	29	47	62	G 1/4 B	14	0,08
80	32	49	79	G 1/4 B	14	0,11
100	31	49	99	G 1/4 B	14	0,26

Conexión a proceso según EN 837-1 / 7.3

Indicaciones relativas al pedido

Modelo / Diámetro nominal / Rango de indicación / Conexión / Opciones

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Instrumentos WIKA S.A.
C/Josep Carner, 11-17
08205 Sabadell (Barcelona)
Tel. (+34) 902 902 577
Fax: (+34) 933 938 666
E-mail: info@wika.es
www.wika.es





Main

Range of product	TeSys D
Product or component type	Contacteur
Device short name	LC1D
Contacteur application	Motor control Resistive load
Utilisation category	AC-1 AC-3
Poles description	3P
Power pole contact composition	3 NO
[Ue] rated operational voltage	<= 690 V DC for power circuit <= 690 V AC 25...400 Hz for power circuit
[Ie] rated operational current	9 A (<= 60 °C) at <= 440 V AC AC-3 for power circuit 25 A (<= 60 °C) at <= 440 V AC AC-1 for power circuit
Motor power kW	5.5 kW at 660...690 V AC 50/60 Hz 5.5 kW at 500 V AC 50/60 Hz 4 kW at 415...440 V AC 50/60 Hz 4 kW at 380...400 V AC 50/60 Hz 2.2 kW at 220...230 V AC 50/60 Hz
Motor power HP (UL / CSA)	7.5 hp at 575/600 V AC 50/60 Hz for 3 phases motors 5 hp at 460/480 V AC 50/60 Hz for 3 phases motors 2 hp at 230/240 V AC 50/60 Hz for 3 phases motors 2 hp at 200/208 V AC 50/60 Hz for 3 phases motors 1 hp at 230/240 V AC 50/60 Hz for 1 phase motors 0.5 hp at 115 V AC 50/60 Hz for 1 phase motors
Control circuit type	DC standard
Control circuit voltage	24 V DC
Auxiliary contact composition	1 NO + 1 NC
[Uimp] rated impulse withstand voltage	6 kV conforming to IEC 60947
Overvoltage category	III
[Ith] conventional free air thermal current	10 A at <= 60 °C for signalling circuit 25 A at <= 60 °C for power circuit
Irms rated making capacity	250 A DC for signalling circuit conforming to IEC 60947-5-1 140 A AC for signalling circuit conforming to IEC 60947-5-1 250 A at 440 V for power circuit conforming to IEC 60947
Rated breaking capacity	250 A at 440 V for power circuit conforming to IEC 60947
[Icw] rated short-time withstand current	61 A <= 40 °C 1 min power circuit 30 A <= 40 °C 10 min power circuit 140 A 100 ms signalling circuit 120 A 500 ms signalling circuit 100 A 1 s signalling circuit 210 A <= 40 °C 1 s power circuit 105 A <= 40 °C 10 s power circuit
Associated fuse rating	20 A gG at <= 690 V coordination type 2 for power circuit 25 A gG at <= 690 V coordination type 1 for power circuit 10 A gG for signalling circuit conforming to IEC 60947-5-1
Average impedance	2.5 mOhm at 50 Hz - Ith 25 A for power circuit

[Ui] rated insulation voltage	600 V for signalling circuit certifications UL 600 V for signalling circuit certifications CSA 690 V for signalling circuit conforming to IEC 60947-1 600 V for power circuit certifications UL 600 V for power circuit certifications CSA 690 V for power circuit conforming to IEC 60947-4-1
Electrical durability	2 Mcycles 9 A AC-3 at $U_e \leq 440$ V 0.6 Mcycles 25 A AC-1 at $U_e \leq 440$ V
Power dissipation per pole	0.2 W AC-3 1.56 W AC-1
Safety cover	With
Mounting support	Plate Rail
Standards	EN 60947-4-1 EN 60947-5-1 IEC 60947-4-1 IEC 60947-5-1 UL 508 CSA C22.2 n° 14
Product certifications	BV CCC CSA DNV GL GOST RINA UL LROS
Connections - terminals	Control circuit: screw clamp terminals 2 cable(s) 1...4 mm ² - cable stiffness: solid - without cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm ² - cable stiffness: solid - without cable end Control circuit: screw clamp terminals 2 cable(s) 1...2.5 mm ² - cable stiffness: flexible - with cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm ² - cable stiffness: flexible - with cable end Control circuit: screw clamp terminals 2 cable(s) 1...4 mm ² - cable stiffness: flexible - without cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm ² - cable stiffness: flexible - without cable end Power circuit: screw clamp terminals 2 cable(s) 1...4 mm ² - cable stiffness: solid - without cable end Power circuit: screw clamp terminals 1 cable(s) 1...4 mm ² - cable stiffness: solid - without cable end Power circuit: screw clamp terminals 2 cable(s) 1...2.5 mm ² - cable stiffness: flexible - with cable end Power circuit: screw clamp terminals 1 cable(s) 1...4 mm ² - cable stiffness: flexible - with cable end Power circuit: screw clamp terminals 2 cable(s) 1...4 mm ² - cable stiffness: flexible - without cable end Power circuit: screw clamp terminals 1 cable(s) 1...4 mm ² - cable stiffness: flexible - without cable end
Tightening torque	Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver Philips No 2 Control circuit: 1.7 N.m - on screw clamp terminals - with screwdriver flat Ø 6 mm Power circuit: 1.7 N.m - on screw clamp terminals - with screwdriver Philips No 2 Power circuit: 1.7 N.m - on screw clamp terminals - with screwdriver flat Ø 6 mm
Operating time	16...24 ms opening 53.55...72.45 ms closing
Safety reliability level	B10d = 2000000 cycles contactor with mechanical load conforming to EN/ISO 13849-1 B10d = 1369863 cycles contactor with nominal load conforming to EN/ISO 13849-1
Mechanical durability	30 Mcycles
Operating rate	3600 cyc/h at ≤ 60 °C

Complementary

Coil technology	Built-in bidirectional peak limiting diode suppressor
Control circuit voltage limits	0.7...1.25 Uc at 60 °C operational 0.1...0.25 Uc at 60 °C drop-out
Time constant	28 ms
Inrush power in W	5.4 W at 20 °C
Hold-in power consumption in W	5.4 W at 20 °C
Auxiliary contacts type	Type mirror contact (1 NC) conforming to IEC 60947-4-1 Type mechanically linked (1 NO + 1 NC) conforming to IEC 60947-5-1
Signalling circuit frequency	25...400 Hz
Minimum switching current	5 mA for signalling circuit
Minimum switching voltage	17 V for signalling circuit
Non-overlap time	1.5 ms on energisation (between NC and NO contact) 1.5 ms on de-energisation (between NC and NO contact)
Insulation resistance	> 10 MOhm for signalling circuit

Environment

IP degree of protection	IP2x front face conforming to IEC 60529
Protective treatment	TH conforming to IEC 60068-2-30
Pollution degree	3
Ambient air temperature for operation	-5...60 °C
Ambient air temperature for storage	-60...80 °C
Permissible ambient air temperature around the device	-40...70 °C at Uc
Operating altitude	3000 m without derating in temperature
Fire resistance	850 °C conforming to IEC 60695-2-1
Flame retardance	V1 conforming to UL 94
Mechanical robustness	Shocks contactor closed 15 Gn for 11 ms Shocks contactor open 10 Gn for 11 ms Vibrations contactor closed 4 Gn, 5...300 Hz Vibrations contactor open 2 Gn, 5...300 Hz
Height	77 mm
Width	45 mm
Depth	95 mm
Product weight	0.48 kg

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS	Compliant - since 0627 - Schneider Electric declaration of conformity download declaration of conformity
REACH	Reference not containing SVHC above the threshold
Product environmental profile	Available Download Product Environmental
Product end of life instruction	Need no specific recycling operations Download Product environmental

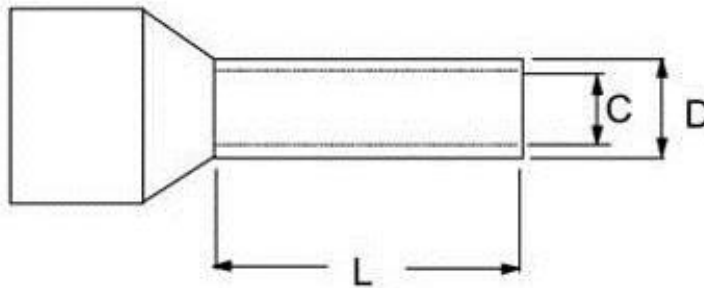
Datasheet

RS Pro French Colour Coded Bootlace Ferrules

RS Stock No:

157-1216,157-1238,458-689,458-695,250-3422,458-702,250-3438,458-718,250-3444,458-724,250-3450,4587-30,250-3466,458-897,250-3472,157-1244,250-3488,250-3494,311-7870,311-7886

Dimensions (mm)



Stock Number	Wire Size mm ²	L	C	D	French Colour
157-1216	0.25	8	0.8	1.1	VIOLET
157-1238	0.34	8	0.8	1.1	PINK
458-689	0.5	8	1	1.3	WHITE
458-695	0.75	8	1.2	1.5	BLUE
250-3422	0.75	12	1.2	1.5	BLUE
458-702	1	8	1.4	1.7	RED
250-3438	1	12	1.4	1.7	RED
458-718	1.5	8	1.7	2	BLACK
250-3444	1.5	18	1.7	2	BLACK
458-724	2.5	8	2.3	2.6	GREY
250-3450	2.5	18	2.3	2.6	GREY
458-730	4	12	2.8	3.2	ORANGE
250-3466	4	18	2.8	3.2	ORANGE
458-897	6	12	3.5	3.9	GREEN
250-3472	6	18	3.5	3.9	GREEN
157-1244	10	12	4.5	4.9	BROWN
250-3488	16	12	5.8	6.2	IVORY
250-3494	25	16	7.5	7.9	BLACK
311-7870	35	25	8.3	8.7	RED
311-7886	50	25	10.3	10.9	BLUE

I MOTORIDUTTORE A VITE SENZA FINE con le seguenti caratteristiche:

MOTORE: Asincrono monofase o trifase a 2 o 4 poli, in forma chiusa con ventilazione esterna. Protettore termico di sicurezza nel tipo monofase. Avvolgimento classe F secondo norme VDE 0530. Protezione IP 65 secondo norme DIN 40050.

RIDUTTORE: Con carcassa in alluminio pressofuso. Interasse mm. 26. Corona in bronzo speciale, durezza 110 HB. Vite in acciaio temprato con filetto rettificato ruotante su cuscinetti a sfera ed a rulli. Lubrificazione con olio speciale a lunga durata. Anelli di tenuta in gomma speciale per alte temperature. I rapporti di riduzione disponibili (i) sono 9, da 7,5 a 80. Coppia nominale 9 Nm. Versione B3 o B5. B5/S sinistro - B5/D destro.

N.B.-Per una corretta scelta del motoriduttore si consiglia di attenersi alle tabelle riportate a pag.102. Per i giri motore a carico riferirsi alla serie **AM** pag.11. Questi motoriduttori hanno necessità di un certo rodaggio. Pertanto, nelle prime 30 ore di funzionamento, si noter  una coppia inferiore ai dati riportati. A richiesta   possibile fornire il motore con freno elettromagnetico a disco alimentato a 230 Vca contraddistinto con lettera K=MCK (vedi caratteristiche a pag. 103). Inoltre, a richiesta,   possibile montare sull'albero lento del riduttore, un sistema di regolazione con due finecorsa per l'arresto automatico nei due sensi di marcia 0 a 28 giri dell'albero lento, con la sigla MC-FI (vedi dimensioni a pag. 49).

GB WORM GEARED MOTOR with the following characteristics:

MOTOR: Asynchronous single or three-phase with 2 or 4 poles, totally enclosed with external ventilation. Thermal safety feature (single-phase model). Class F winding in accordance with VDE 0530. IP 65 protection in accordance with DIN 40050.

GEAR UNIT: With die-cast aluminium casing. Wheelbase 26 mm. Wheel rim in special bronze 110 HB hardness. Worm gear in hardened steel with grinding thread rotating on ball and roller bearings. Lubrication with special long-lasting oil. Sealing rings made in special rubber for high temperatures. gear ratios (i) available, from 7.5 to 80. Rated torque 9 Nm. Version B3 or B5. B5/S left version - B5/D right version.

N.B.-For the correct choice of a gear unit, it is advisable to consult the tables on page 102. Refer to **AM** series page 11 for motor revs under load. These geared motors require a period of running-in. Therefore, during the first 30 working hours, the resulting torque will be lower than the values given. On request, motor can be equipped with electromagnetic disc brake supplied at 230 Vac, using the letter 'K' (MCK) (see characteristics on page 103). It is also possible on request to fit a regulation system with two limit switches on the gear unit low speed shaft with automatic stop from 0-28 revs in both directions, using the code MC-FI (see dimensions on page 49).

F MOTOR DUCTEUR   VIS SANS FIN avec les caract ristiques suivantes:

MOTEUR: Asynchrone monophas  ou triphas    2 ou 4 p les, en ex cution ferm e avec ventilation ext rieure. Protecteur thermique de s curit  dans le mod le monophas . Enroulement classe F selon normes VDE 0530. Protection IP 65 selon normes DIN 40050.

REDUCTEUR: Avec carcasse en aluminium moul  en pression. Empattement 26 mm. Couronne en bronze sp cial, duret  110 HB vis en acier tremp  avec filet rectifi  roulant sur paliers   billes et   rouleaux. Lubrification par huile sp ciale longue dur e. Bagues d' tanch it  en caoutchouc sp cial pour hautes temp ratures. Les rapports de r duction disponibles (i) sont 9, de 7,5 jusqu'  80. Couple nominal 9 Nm. Versions B3 ou B5. B5/S version gauche - B5/D version droite.

N.B.-Pour un choix correct du r ducteur il est conseill  de consulter les tableaux   la page 102. Pour les tours moteur en charge se reporter   la s rie **AM** page 11. Ces motor ducteurs ont besoin d'une certaine p riode de rodage. Par cons quent, pendant les premi res 30 heures de fonctionnement, on pourra remarquer un couple inf rieur aux donn es indiqu es. Sur demande il est possible de livrer le moteur avec frein  lectromagn tique   disque, aliment    230 Vca avec la d signation K=MCK (voir caract ristiques   la page 103). Sur demande il est aussi possible de monter sur l'arbre lent du r ducteur, un syst me de r glage avec deux fins-de-course pour l'arr t automatique dans les deux sens de marche, de 0   28 tours de l'arbre lent, avec la d signation MC-FI (voir dimensions   la page 49).

D SCHNECKENGETRIEBEMOTOR mit folgenden Eigenschaften:

MOTOR: Geschlossener AsynchronK figl ufer-Einphasen oder Drehstrommotor, zwei-oder vierpolig, mit Aussenbel ftung. Thermoschutzschalter bei der einphasigen Ausf hrung. Isolationsklasse F gem. VDE 0530. Schutzart IP 65 gem. DIN 40050.

UNTERSETZUNGSGETRIEBE: Getriebegeh use aus Alu-Druckguss Achsabstand: 26 mm. Zahnkranz aus Spezialbronze mit Festigkeit 110 HB. Schnecke aus geh rtetem Stahl mit geschliffenem Gewinde auf Kugel-und Kegelrollenlagern drehend. Schmierung mit Spezial l mit Langzeitschmierung. Dichtungsringe aus Spezial-Gummi f r hohe Temperaturen. Die Untersetzungsverh ltnisse (i) sind 9, von 7,5 bis 80. Nennmoment 9 Nm. Bauformen B3 oder B5. B5/S Linke Ausf hrung-B5/D Rechte Ausf hrung.

WICHTIGER HINWEIS - F r die richtige Wahl des Getriebemotors wird empfohlen, die Tabellen auf Seite 102 zu beachten. F r die Motordrehzahl unter Belastung ist Bezug auf die Serie **AM** Seite 11 zu nehmen. Diese Getriebemotoren sind f r eine gewisse Zeit einlaufen zu lassen. Deswegen kann das Drehmoment in den ersten 30 Betriebsstunden niedriger im Vergleich mit den angegebenen Daten sein. Auf Wunsch k nnen folgende Ausf hrungen geliefert werden:-Motor mit elektromagnetischer Scheibenbremse, 230 Vac Wechselstrom, durch den Buchstaben K gekennzeichnet (MCK) (Eigenschaften auf dieser Seite 103). Ausserdem wird auf Wunsch auf der langsamlaufenden Welle des Getriebes eine Reguliervorrichtung mit zwei Endanschl gen f r das automatische Stoppen der langsamlaufenden Welle in beiden Drehrichtungen von 0 bis 28 U/min-1 geliefert. Die Reguliervorrichtung wird unter der Kurzbezeichnung MC-FI angeboten (Leistungen siehe Seite 49).

Rapporto Ratio Rapport Übersetzungs- verhältnis I	TIPO TYPE TYPE TYP	Potenza resa Power delivered Puissance développée Abgegebene Leistung W P2	Giri entrata a vuoto Input r.p.m. no-load Tours entrée à vide Eingangsdrehzahl, unbelastet n1	Giri uscita a vuoto Output r.p.m. no-load Tours sortie à vide Ausgangsdrehzahl, unbelastet n2	Coppia nominale Rated torque Couple nominal Nenn Drehmoment Nm M2	Tensione Tension Voltage Spannung V	Corrente Current Courant Strom A	Condensatore Capacitor Condensateur Kondensator µF
7,5	MC 100P	35	2800	373	0,8	230	0,41	3,15
	MC 160P2	60	2800	373	1,5	230	0,54	4
	MC 240P3	140	2800	373	3,4	230	1,03	8
	MC 80P	15	1400	186	0,8	230	0,33	4
	MC 110P2	19	1400	186	1	230	0,41	5
	MC 165P3	44	1400	186	2,3	230	0,53	4
	MC 244PT	49	2800	373	1,2	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	373	1,8	230/400	0,62/0,36	TRIFASE
	MC 440P3T	180	2800	373	4,4	230/400	0,90/0,52	TRIFASE
	MC 110PT	14	1400	186	0,7	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	186	0,9	230/400	0,32/0,18	TRIFASE
	MC 230P3T	63	1400	186	3,4	230/400	0,58/0,34	TRIFASE
10	MC 100P	35	2800	280	1,1	230	0,41	3,15
	MC 160P2	60	2800	280	1,9	230	0,54	4
	MC 240P3	140	2800	280	4,4	230	1,03	8
	MC 80P	15	1400	140	1	230	0,33	4
	MC 110P2	19	1400	140	1,3	230	0,41	5
	MC 165P3	44	1400	140	3,1	230	0,53	4
	MC 244PT	49	2800	280	1,6	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	280	2,4	230/400	0,62/0,36	TRIFASE
	MC 440P3T	180	2800	280	5,8	230/400	0,90/0,52	TRIFASE
	MC 110PT	14	1400	140	0,9	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	140	1,2	230/400	0,32/0,18	TRIFASE
	MC 230P3T	63	1400	140	4,4	230/400	0,58/0,34	TRIFASE
15	MC 100P	35	2800	186	1,6	230	0,41	3,15
	MC 160P2	60	2800	186	2,8	230	0,54	4
	MC 240P3	140	2800	186	6,4	230	1,03	8
	MC 80P	15	1400	93	1,5	230	0,33	4
	MC 110P2	19	1400	93	1,9	230	0,41	5
	MC 165P3	44	1400	93	4,5	230	0,53	4
	MC 244PT	49	2800	186	2,3	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	186	3,4	230/400	0,62/0,36	TRIFASE
	MC 440P3T	180	2800	186	8,4	230/400	0,90/0,52	TRIFASE
	MC 110PT	14	1400	93	1,4	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	93	1,8	230/400	0,32/0,18	TRIFASE
	MC 230P3T	63	1400	93	6,4	230/400	0,58/0,34	TRIFASE
20	MC 100P	35	2800	140	2	230	0,41	3,15
	MC 160P2	60	2800	140	3,4	230	0,54	4
	MC 240P3	140	2800	140	7,9	230	1,03	8
	MC 80P	15	1400	70	1,8	230	0,33	4
	MC 110P2	19	1400	70	2,3	230	0,41	5
	MC 165P3	44	1400	70	5,5	230	0,53	4
	MC 244PT	49	2800	140	2,8	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	140	4,2	230/400	0,62/0,36	TRIFASE
	MC 440P3T	180	2800	140	*9	230/400	0,90/0,52	TRIFASE
	MC 110PT	14	1400	70	1,7	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	70	2,2	230/400	0,32/0,18	TRIFASE
	MC 230P3T	63	1400	70	7,9	230/400	0,58/0,34	TRIFASE

I * I valori relativi alla coppia contrassegnati con l'asterisco non devono assolutamente essere superati, in quanto, con i rapporti elevati, la potenza motore è notevolmente superiore alla portata del riduttore.

GB * The torque values marked with an asterisk must absolutely not be exceeded for the higher gear ratios as the motor power is considerably higher than the capacity of the gear unit.

F * Les valeurs relatives au couple, marquées avec l'astérisque, ne doivent JAMAIS être dépassées car, avec les rapports élevés, la puissance moteur est considérablement supérieure à la portée du réducteur.

D * Die mit einem Stern bezeichneten Drehmomente dürfen keinesfalls überschritten werden, da bei hohen Übersetzungen die Motorleistung viel höher als die zulässige Belastung des Getriebes ist.

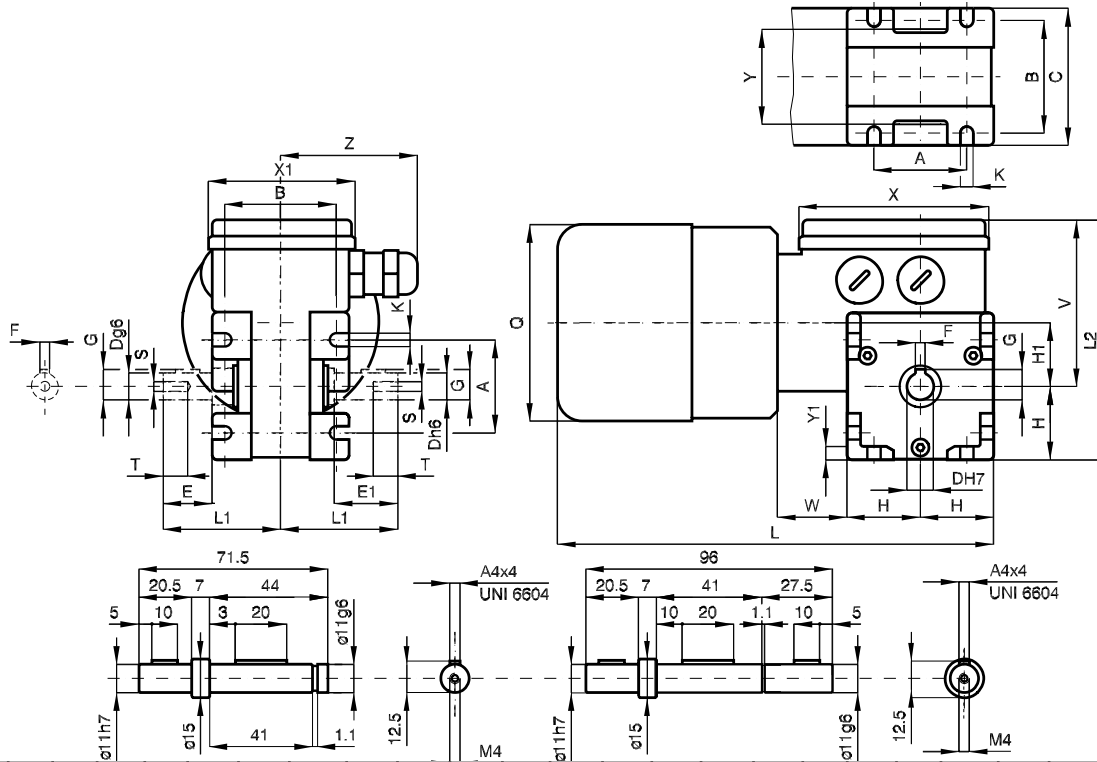
Rapporto Ratio Rapport Übersetzungs- verhältnis I	TIPO TYPE TYPE TYP	Potenza resa Power delivered Puissance développée Abgegebene Leistung W P2	Giri entrata a vuoto Input r.p.m. no-load Tours entrée à vide Eingangsdrehzahl, unbelastet n1	Giri uscita a vuoto Output r.p.m. no-load Tours sortie à vide Ausgangsdrehzahl, unbelastet n2	Coppia nominale Rated torque Couple nominal Nenn Drehmoment Nm M2	Tensione Tension Voltage Spannung V	Corrente Current Courant Strom A	Condensatore Capacitor Condensateur Kondensator µF
30	MC 100P	35	2800	93	2,8	230	0,41	3,15
	MC 160P2	60	2800	93	4,8	230	0,54	4
	MC 240P3	140	2800	93	*9	230	1,03	8
	MC 80P	15	1400	46,5	2,6	230	0,33	4
	MC 110P2	19	1400	46,5	3,2	230	0,41	5
	MC 165P3	44	1400	46,5	7,6	230	0,53	4
	MC 244PT	49	2800	93	3,9	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	93	5,9	230/400	0,62/0,36	TRIFASE
	MC 440P3T	180	2800	93	*9	230/400	0,90/0,52	TRIFASE
	MC 110PT	14	1400	46,5	2,4	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	46,5	3	230/400	0,32/0,18	TRIFASE
MC 230P3T	63	1400	46,5	*9	230/400	0,58/0,34	TRIFASE	
40	MC 100P	35	2800	70	3,5	230	0,41	3,15
	MC 160P2	60	2800	70	5,9	230	0,54	4
	MC 240P3	140	2800	70	*9	230	1,03	8
	MC 80P	15	1400	35	3,2	230	0,33	4
	MC 110P2	19	1400	35	4	230	0,41	5
	MC 165P3	44	1400	35	*9	230	0,53	4
	MC 244PT	49	2800	70	4,8	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	70	7,3	230/400	0,62/0,36	TRIFASE
	MC 440P3T	180	2800	70	*9	230/400	0,90/0,52	TRIFASE
	MC 110PT	14	1400	35	3	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	35	3,8	230/400	0,32/0,18	TRIFASE
MC 230P3T	63	1400	35	*9	230/400	0,58/0,34	TRIFASE	
60	MC 100P	35	2800	46	5	230	0,41	3,15
	MC 160P2	60	2800	46	8,5	230	0,54	4
	MC 80P	15	1400	23	4,6	230	0,33	4
	MC 110P2	19	1400	23	5,8	230	0,41	5
	MC 165P3	44	1400	23	*9	230	0,53	4
	MC 244PT	49	2800	46	7	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	46	*9	230/400	0,62/0,36	TRIFASE
	MC 110PT	14	1400	23	4,2	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	23	5,4	230/400	0,32/0,18	TRIFASE
70	MC 100P	35	2800	40	5,3	230	0,41	3,15
	MC 160P2	60	2800	40	*9	230	0,54	4
	MC 80P	15	1400	20	4,9	230	0,33	4
	MC 110P2	19	1400	20	6,1	230	0,41	5
	MC 244PT	49	2800	40	7,4	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	40	*9	230/400	0,62/0,36	TRIFASE
	MC 110PT	14	1400	20	4,5	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	20	5,7	230/400	0,32/0,18	TRIFASE
80	MC 100P	35	2800	35	5,7	230	0,41	3,15
	MC 160P2	60	2800	35	*9	230	0,54	4
	MC 80P	15	1400	17,5	5,2	230	0,33	4
	MC 110P2	19	1400	17,5	6,6	230	0,41	5
	MC 244PT	49	2800	35	7,9	230/400	0,52/0,30	TRIFASE
	MC 320P2T	74	2800	35	*9	230/400	0,62/0,36	TRIFASE
	MC 110PT	14	1400	17,5	4,8	230/400	0,25/0,14	TRIFASE
	MC 145P2T	18	1400	17,5	6,1	230/400	0,32/0,18	TRIFASE

I * I valori relativi alla coppia contrassegnati con l'asterisco non devono assolutamente essere superati, in quanto, con i rapporti elevati, la potenza motore è notevolmente superiore alla portata del riduttore.

GB * The torque values marked with an asterisk must absolutely not be exceeded for the higher gear ratios as the motor power is considerably higher than the capacity of the gear unit.

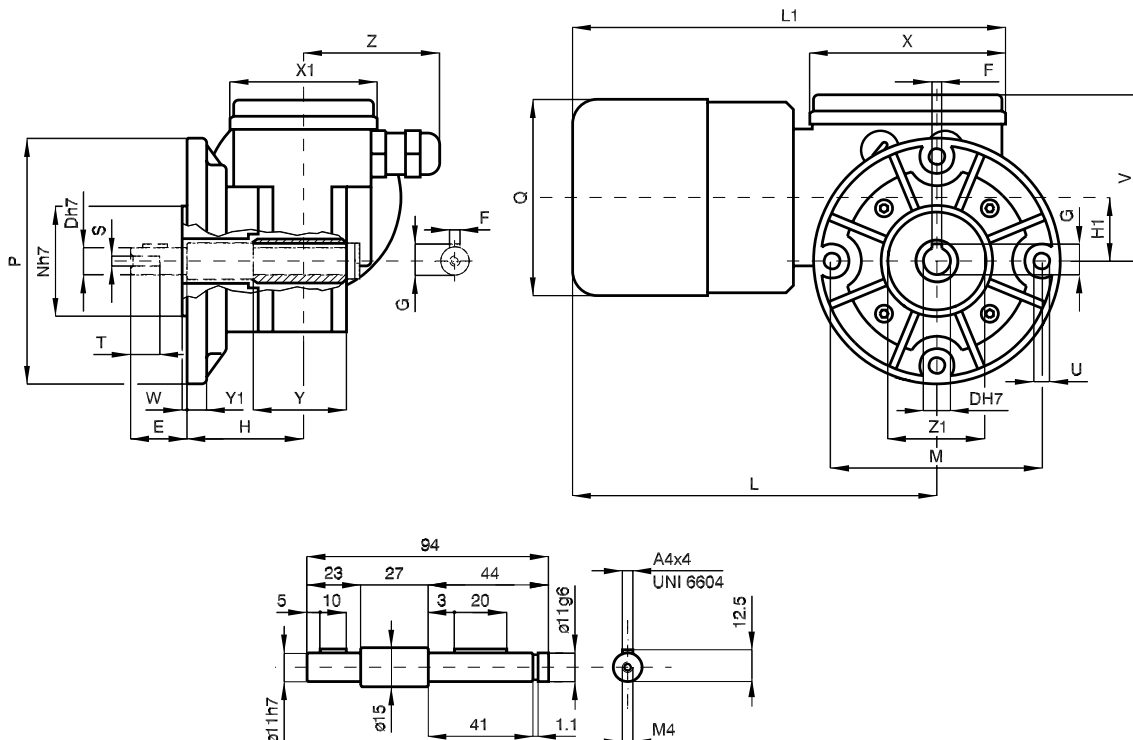
F * Les valeurs relatives au couple, marquées avec l'astérisque, ne doivent JAMAIS être dépassées car, avec les rapports élevés, la puissance moteur est considérablement supérieure à la portée du réducteur.

D * Die mit einem Stern bezeichneten Drehmomente dürfen keinesfalls überschritten werden, da bei hohen Übersetzungen die Motorleistung viel höher als die zulässige Belastung des Getriebes ist.



B3

TIPO-TYPE TYPE-TYP	A	B	C	D	E	E1	F	G	H	H1	K	L	L1	L2	Q	S	T	V	X	X1	Y	Y1	W	Z	PESO-WEIGHT POIDS-GEWICHT Kg.
MC...P	38	47	58	11	20,5	26	4	12,8	30	26	5,5	193	48	99	81	M4	10	69	80	60	41	6	28	56	2,130
MC...P2	38	47	58	11	20,5	26	4	12,8	30	26	5,5	213	48	99	81	M4	10	69	80	60	41	6	28	56	2,440
MC...P3	38	47	58	11	20,5	26	4	12,8	30	26	5,5	251	48	99	95	M4	10	69	80	60	41	6	28	56	3,530



B5/S

TIPO-TYPE TYPE-TYP	D	E	F	G	H	H1	L	L1	M	N	P	Q	S	T	U	V	X	X1	Y	Y1	W	Z	Z1	PESO-WEIGHT POIDS-GEWICHT Kg.
MC...P	11	23	4	12,8	47	26	163	191	86	45	100	81	M4	10	6,5	69	80	60	41	8	2	56	40	2,330
MC...P2	11	23	4	12,8	47	26	183	211	86	45	100	81	M4	10	6,5	69	80	60	41	8	2	56	40	2,640
MC...P3	11	23	4	12,8	47	26	221	250	86	45	100	95	M4	10	6,5	69	80	60	41	8	2	56	40	3,730

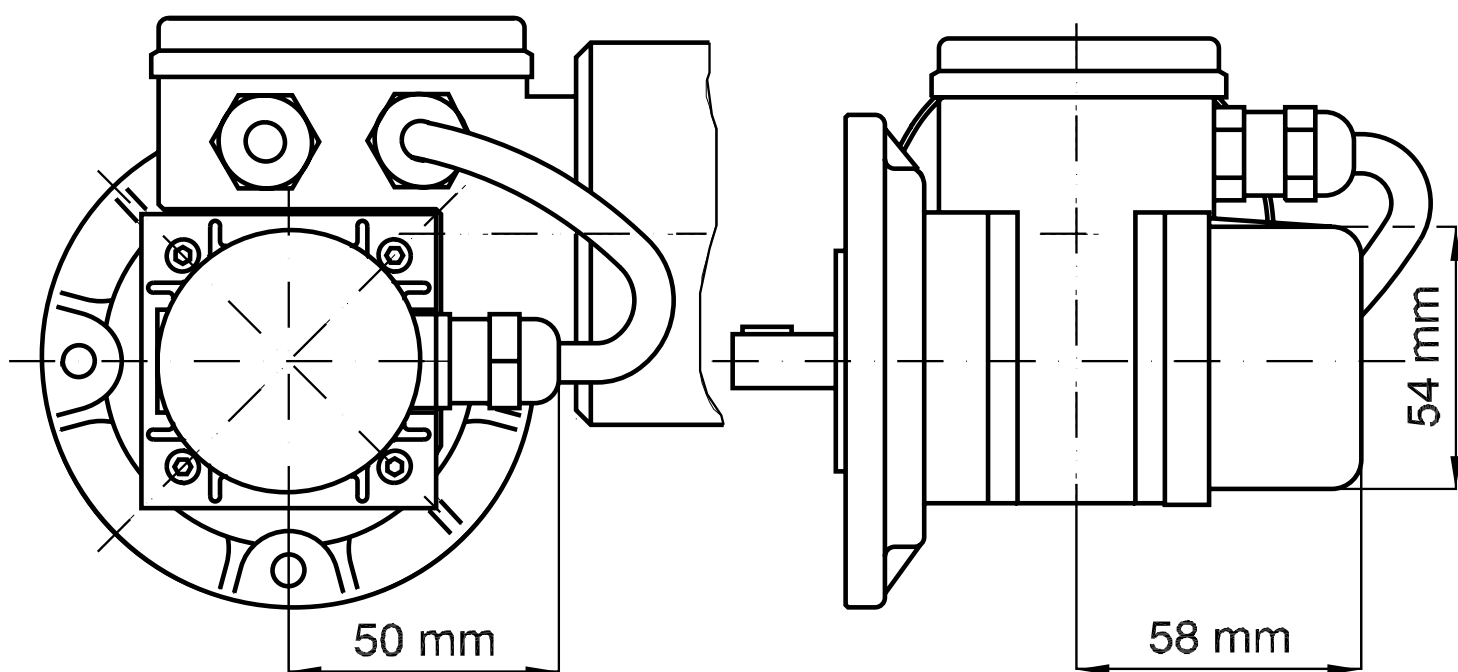
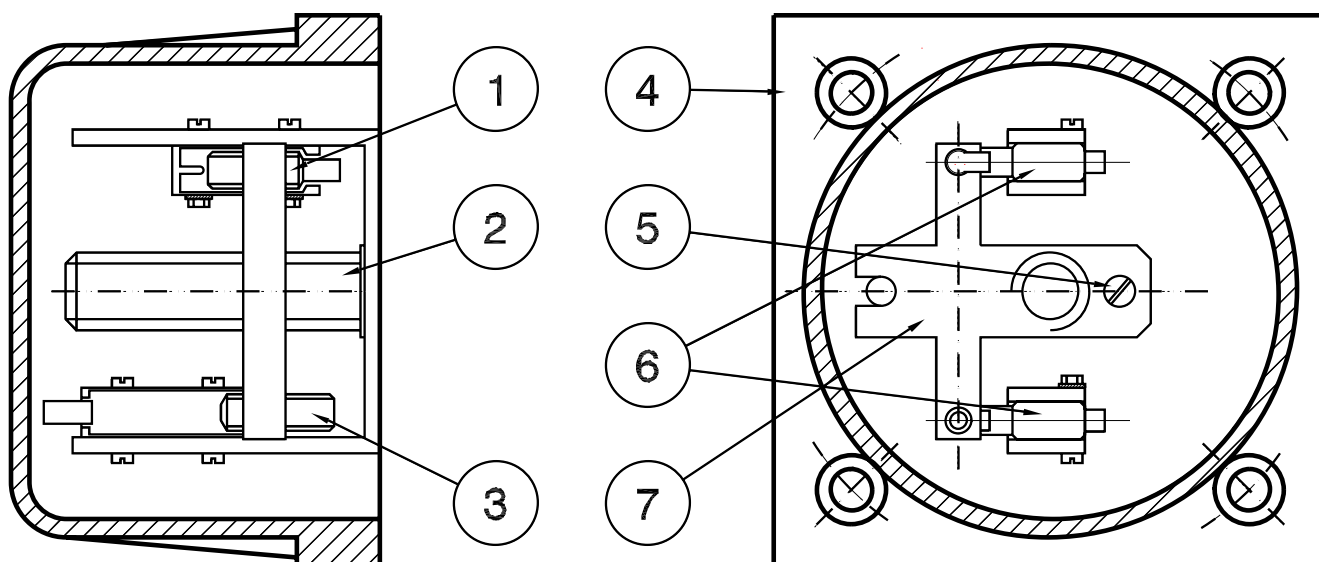
I Nella esecuzione autofrenante aggiungere alla sigla del tipo la lettera K.
Le quote L, L1 aumentano di 27 mm.

GB For the self-braking version, add the letter K to the type designation.
Dimensions L, L1 increase by 27 mm.

F Dans le modèle autofreinant, ajouter à la designation du type la lettre K.
Les cotes L, L1 augmentent de 27 mm.

D In der Ausführung als Bremsmotor ist der Typen-Kurzbezeichnung der
Buchstabe K beizufügen. Die Masse L, L1 werden um 27 mm erhöht.

MC-FI-B5/S



1) Vite di regolazione finecorsa 1

2) Albero filettato

3) Vite di regolazione finecorsa 2

I 4) Coperchio di protezione IP 55 secondo norme DIN 40050

5) Vite di regolazione corsoio mobile

6) Finecorsa

7) Corsoio mobile

1) Vis de réglage fin de course 1

2) Arbre fileté

3) Vis de réglage fin de course 2

F 4) Couvercle de protection IP 55 selon normes DIN 40050

5) Vis de réglage coulisse mobile

6) Fin de course

7) Coulisse mobile

1) Limit switch 1 adjusting screw

2) Threaded shaft

3) Limit switch 2 adjusting screw

GB 4) Protective cover IP 55 as per DIN 40050 regulations

5) Mobile slider adjusting screw

6) Limit switch

7) Mobile slider

1) Endschalter-Einstellschraube 1

2) Gewindewelle

3) Endschalter-Einstellschraube 2

D 4) Schutzdeckel IP 55 den DIN-Normen 40050 gemäß

5) Einstellschraube des verstellbaren Schiebers

6) Endschalter

7) Verstellbarer Schieber