MICROPROCESSOR SENSOR FOR DIN RAIL









- 10 bit resolution models with 500 µs response for high operating distances
- 12 bit resolution models with 50 µs response and 4 digit display for high speed
- EASYtouch™ push button setting with remote control, keylock and output delay
- Ultra-thin housing with CLEARLOCK™ patented fibre fixing system

the 1st in Europe

S7 SERIES

The **S7** series is the first fibre optic amplifier to be manufactured in Europe that is equipped with a full 4 digit display, confirming Datasensor's technological leadership. With its slim 10mm body width, the **S7** represents the ideal solution for all applications requiring high accuracy sensing combined with very compact dimensions.

The high resolution 12 bit amplifier has a response time of 50 μ s for a switching frequency of 10 Khz. The 12 bit, 4096 resolution steps make the **S7** series perfect for ultra high precision detection of small objects and low colour contrasts.

This is made easier by the integral 4 digit display, which clearly indicates the received signal, selected time delay and the adjustable set point values. Moreover, the white light LED emission possibility enhances the contrast detection.

Setting the **S7** is easy and rapid, thanks to the patent-covered EASYtouch™ adjustment system, that offers remote setting, keylock and activation of the output OFF delay function.



The ultra-thin housing is specifically designed for side-by-side mounting on DIN rail where space is limited or mounting through two M3 clearance holes onto the side of a machine. The CLEARLOCK™ fibre-optic fixing system assists reliable insertion of standard and high performance fibre-optics. Ø EASYtouch™ one touch setting procedure automatically selects the best detection conditions. For critical applications a two touch setting is provided for fine tuning. S7 benefits from remote teach, keypad lock and delay off timing functions. For further information on our extensive range of fibre-optic accessories please see our OF datasheet.





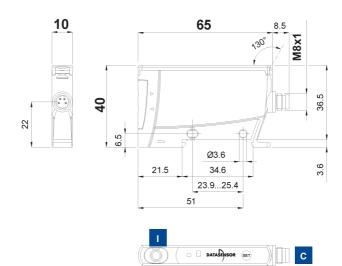
 $CLEARLOCK^{TM}$

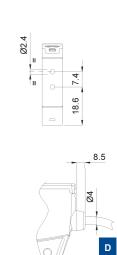
ACCESSORIES

For dedicated accessories refer to the **ACCESSORIES** section of this catalogue

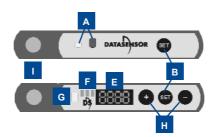
Refer also to Fibre-Optics (A.02), Connectors (A.03) and Fixing brackets (A.04) of the General Catalogue

DIMENSIONS





INDICATORS AND SETTINGS



Teach-in button for setting. EASYtouch™ provides two setting modes: standard or fine. Please refer to instructions manual for operating details

- **OUTPUT** status and READY/ERROR LEDs
- Teach-in push-button
- M8 connector output
- Cable output
- 4 digit display
- STATUS signalling **LEDs**
- G OUTPUT status LED
- '+' e '-' buttons
- Fibre lock/unlock button

CONNECTIONS

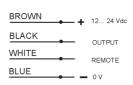


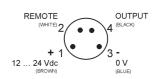
S7-1/2/3





S7-4/5/6







25/50/75/100/300 mm







TECHNICAL DATA

		_		_									
		S7-1-E-N	S7-1-E-P	S7-2-E-N	ų.	S7-3-E-N	E-P	S7-4-E-N	S7-4-E-P	S7-5-E-N	S7-5-E-P	S7-6-E-N	S7-6-E-P
		1-1-	7-1	7-2-	7-2-	7-3	7-3	7-4-	7-4	7-5	7-5	-9-2	9-2
		S	ီ	S	တ	S	S	S	S	တ	S	S	S
Proximity operating distance					-					_	_		_
Proximity operating distance	0 100 mm (normal mode)			•	•	•	•	-			•	•	•
	0 50 mm (fast mode)			•	•	Ť	Ť			•	•	Ť	Ť
	0 25 mm (fast and normal mode)	•	•	Ť	Ť			•	•		Ť	\dashv	-
Through beam operating dist					П			П		\exists	\forall	\dashv	\neg
	0 300 mm (normal mode)			•	•	•	•	П		•	•	•	•
	0 150 mm (fast mode)			•	•					•	•	\neg	П
	0 75 mm (fast and normal mode)	•	•					•	•		\Box		
Power supply:	12 24 Vdc ± 10 % ¹	•	•	•	•	•	•	•	•	•	•	•	•
Consumption:	≤ 50 mA	•	•	•	•	•	•	•	•	•	•	•	•
Light emission 2:	red LED 670 nm			•	•	•	•			•	•	•	•
	white LED 460 630 nm	•	•					•	•		_		
Setting:	teach-in SET button	•	•	•	•	•	•	•	•	•	•	•	•
	remote via cable 3	•	•	•	•	•	•	•	•	•	•	•	•
	'+' e '-' buttons (ADJUST/MENU)	•	•	•	•	•	•	•	•	•	•	•	•
Setting procedure:	EASYtouch™ or fine	•	•	•	•	•	•	•	•	•	•	•	•
Indicators:	yellow USCITA LED	•	•	•	•	•	•	•	•	•	•	•	•
	green / red READY / ERROR LED	L	L	_		•	•				_	•	•
Output time:	4 digit display, status bar	•	•	•	•		_	•	•	•	•	_	_
Output type:	PNP, NO NPN. NO		•	•	•	•	•		•		•		•
Output current:	≤ 100 mA	•	•	•		•	•	•		•	•	•	
Saturation voltage:	< 2 V	-	-	-		-	•	•	•	•	-	•	$\stackrel{\bullet}{=}$
Response time:	500 μs (normal mode)		-	•			•	•	•		•	•	-
response time.	100 μs (fast mode)	Ť	_	•		_	_	_	_	•	•	_	-
	50 μs (fast mode)	•	•	_	_			•	•		-	\dashv	-
Switching frequency (max.):	1 kHz (normal mode)	•	•	•	•	•	•	•	•	•	•	•	•
contouring in equation (internal).	5 kHz (fast mode)	Ť	Ť	•	•	Ť	Ť	Ť	Ť	•	•	Ť	Ť
	10 kHz (fast mode)	•	•	Ť	Ť			•	•	Ť	Ť	\dashv	-
Operating mode:	light with EASYtouch™	•	•	•	•	•	•	•	•	•	•	•	•
<u> </u>	automatic dark / light with fine acq.	•	•	•	•	•	•	•	•	•	•	•	•
Timing function:	20 ms minimum output ON	•	•	•	•	•	•	•	•	•	•	•	•
Auxiliary functions:	remote 4	•	•	•	•	•	•	•	•	•	•	•	•
-	keylock	•	•	•	•	•	•	•	•	•	•	•	•
Connection:	2 m Ø 4 mm cable ⁵	•	•	•	•	•	•						
	M8 4-pole connector							•	•	•	•	•	•
Electrical protection:	class 2	•	•	•	•	•	•	•	•	•	•	•	•
Mechanical protection:	IP65	•	•	•	•	•	•	•	•	•	•	•	•
Electrical protection device:	A, B ⁶	•	•	•	•	•	•	•	•	•	•	•	•
Housing material:	ABS	•	•	•	•	•	•	•	•	•	•	•	•
Weight:	30 g max.	•	•	•	•	•	•	Щ			_		_
Francticulus town	115 g max.	Ļ	_	L				•	•	•	•	•	•
Functioning temp.:	-10 +55°C	•	•	•	•	•	•	•	•	•	•	•	•
Storage temp.:	-10 +70°C	•	•	•	•	•	•	•	•	•	•	•	•
Reference standard:	EN 60947-5-2	•	•	•	•	•	•	•	•	•	•	•	

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fibre-optic sensor with display - 2 m cable					
S7-1-E-N	950551080	NPN			
S7-1-E-P	950551090	PNP			
S7-2-E-N	950551000	NPN			
S7-2-E-P	950551010	PNP			

fibre-optic sensor without display - 2 m cable					
S7-3-E-N	950551040	NPN			
S7-3-E-P	950551050	PNP			

fibre-optic sensor with display - M8 connector					
S7-4-E-N	950551100	NPN			
S7-4-E-P	950551110	PNP			
S7-5-E-N	950551020	NPN			
S7-5-E-P	950551030	PNP			

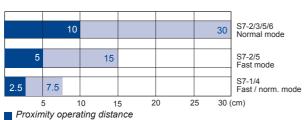
fibre-optic sens	or without display - M8 c	onnector
S7-6-E-N	950551060	NPN
S7-6-F-P	950551070	PNP

TECHNICAL NOTES

- ¹ Limit values
- 2 Average life of 100.000 h with T_A = +25 $^{\circ}$ C
- ³ Connect to 0 V when remote wire not used
- ⁴ Active with remote at +V at power on
- ⁵ PVC, 4 x 0.14 mm²
- ⁶ A reverse polarity protection
 - B overload and short circuit protection



DETECTION DIAGRAMS



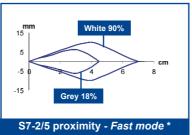
Through beam operating distance

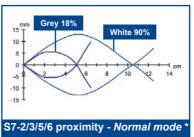
Standard fibre-optics:

OF-42-ST-20 proximity / OF-43-ST-20 through beam

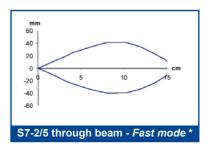
High efficiency fibre-optics or accessory lenses can be used to obtain larger operating distances. Refer to **Fibre-optics** (A.02) of the **General Catalogue**

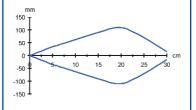
Note: the detection diagrams of the S7-1/4 models in normal and fast mode, corresponds to the values of the S7-2/5 models in fast mode, but with half the operating distance





^{*} standard fibre-optics





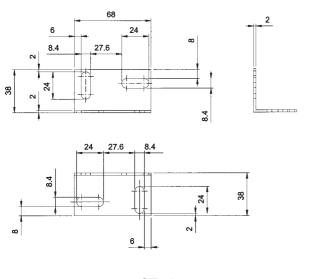
S7-2/3/5/6 th. beam - Normal mode*

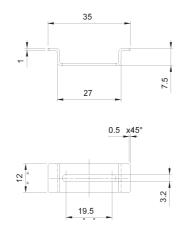


SELECTION AND ORDER INFORMATION

MODEL	CONNECTION	OUTPUT	DISPLAY	EMISSION	CODE N°
S7-1-E-N	4-pole cable	NPN	yes	white LED	950551080
S7-1-E-P	4-pole cable	PNP	yes	white LED	950551090
S7-2-E-N	4-pole cable	NPN	yes	red LED	950551000
S7-2-E-P	4-pole cable	PNP	yes	red LED	950551010
S7-3-E-N	4-pole cable	NPN	no	red LED	950551040
S7-3-E-P	4-pole cable	PNP	no	red LED	950551050
S7-4-E-N	M8 4-pole connector	NPN	yes	white LED	950551100
S7-4-E-P	M8 4-pole connector	PNP	yes	white LED	950551110
S7-5-E-N	M8 4-pole connector	NPN	yes	red LED	950551020
S7-5-E-P	M8 4-pole connector	PNP	yes	red LED	950551030
S7-6-E-N	M8 4-pole connector	NPN	no	red LED	950551060
S7-6-E-P	M8 4-pole connector	PNP	no	red LED	950551070

ACCESSORIES - DIMENSIONS





ST-505 CRD-5000

ACCESSORIES - SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	CODE N°
ST-505	1 pc 'L'- shaped fixing support	95ACC1300
CRD-5000	1 pc fixing support on DIN rail	95ACC1290

Refer also to Accessories for Sensors of the General Catalogue



Distribuited by:

HEADQUARTERS

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