

DS4 Standard

DETECTION AND MEASUREMENT AREA SENSOR



Versatile area sensors for detecting and measuring in various industrial applications. Conveniently configured using IO-Link and wirelessly programmable through AppGUI for detailed parameter adjustments and advanced setups.

- Detection height from 300 to 3000 mm
- 5, 10, 25 mm pitch
- Operating distance up to 13 m
- IO-Link or Wi-Fi App GUI configuration for monitoring, quick setting and advanced functions
- Digital and analogue output (0...10 V or 4...20 mA)
- Transparent object detection
- Crossed or parallel beams
- Communication interface: RS 485 and Ethernet TCP/IP
- 3 configurable digital I/Os



CODE DESCRIPTION

DS4 - 05 - 300 - S 08 - JE

series	DS4	Area sensors detection and measurement
pitch	05	5 mm
	10	10 mm
	25	25 mm
controlled height	0300	300 mm
	0450	450 mm
	0600	600 mm
	0750	750 mm
	0900	900 mm
	1050	1050 mm
	1200	1200 mm
	1350	1350 mm
	1500	1500 mm
	1650	1650 mm
	1800	1800 mm
	1950	1950 mm
	2100	2100 mm
	2250	2250 mm
	2400	2400 mm
	2550	2550 mm
2700	2700 mm	
2850	2850 mm	
3000	3000 mm	
model	S	Standard
receiver plug (M12)	08	8 poles
	12	8 poles + 4 poles
output	JZ	Analogue V/A, IO-Link, Digital outputs, RS 485
	JE	Analogue V/A, IO-Link, Digital outputs, ETHERNET TCP/IP

TECHNICAL SPECIFICATIONS

DS4 Standard

DETECTION/MEASUREMENT AREA SENSORS

DS4-**-****-S08-JZ

DS4-**-****-S12-JE



GENERAL DATA	
Operating principle	Emitter + Receiver
MONITORED AREA	
Nominal sensing distance	0.2 ... 13 m
Controlled height	300 ... 3000 mm
EMISSION DATA	
Emission	Infrared (850nm)
FUNCTIONS	
Available functions	Advanced functions: Transparent object Blanking Pattern match
INPUT/OUTPUT	
Output type	PNP or NPN or Push-Pull , 0...10 V, 4..20 mA, IO-Link, RS485
Baud rate	2400/9600/19200/28400/57600/115200/230400/576000/921600 Default: 57600
IO-LINK	
IO-Link version	IO-Link V1.1
Transmission rate	230400 bits/s (COM3)
Minimum cycle time	2 ms
DeviceID DEC	1
Process Data input length	32 Bytes
Process data output l	8 Bits
HMI/UI	
LED Indicators (TX)	Green (Power ON), Yellow (Emission range) Red (Test, failure, Firmware ongoing update), Blue (Emission range, Firmware update completed)
LED Indicators (RX)	Green (Power ON), Yellow (Status output, Connection and teach-in active) Red (Hardware Errors, Invalid configuration, module optical occupied)
ELECTRICAL DATA	
Supply voltage	19.2 ... 28.8 Vdc
Maximum No-load absorption	360 mA(emitter and receiver)
Power consumption - Emitter	≤ 2 W
Power consumption - Receiver	≤ 5 W
Maximum DC output voltage drop	2.5 V @ IL=100mA
Maximum DC load current	100 mA
MECHANICAL DATA	
Dimensions	35 x 40 x (307.5 ... 3009) mm
Material	Aluminium / PBT
Housing material	Aluminium
Optic window material	PMMA
Connections	M12 5 poles + 200 mm length cable TPU (TX), M12 8 poles + 200 mm length cable TPU (RX) (DS4-**-****-S08-JZ)
	M12 5 poles + 200 mm length cable TPU (TX), M12 8 poles + 200 mm length cable TPU (RX), M12 4 poles D code + 150 mm length cable TPU (ETH) (DS4-**-****-S12-JE)
Weight	1.40 Kg/m single bar, without package
ENVIRONMENTAL DATA	
Operating Temperature	-30 ... 55 °C (without freeze)
Storage temperature max.	-30 ... 70 °C
Mechanical Protection	IP65 IP67
Shocks and vibrations	10 mm / 3g, 5 ... 150 Hz frequency, (EN 60068-2-6 / Class 3M7 IEC TR 60721-4-3); 25g x 6 ms x 600 (EN 60068-2-27 / Class 3M7 IEC TR 60721-4-3)
Humidity	15 ... 95 % (no freeze)

AVAILABLE MODELS

Distance between beams	Nominal sensing distance	Sensitivity adjustment	Response time	Controlled height	Beams number	Output type	
						PNP or NPN or Push-Pull , 0...10 V, 4..20 mA, IO-Link, RS485	PNP or NPN or Push-Pull , 0...10 V, 4..20 mA, IO-Link, Ethernet TCP/IP
5 mm	0.2 ... 5 m Transparent objects (T = 0...50 °C; H ≤ 1.5 m): 10% (0.35 - 1.5 m) 20% (0.35 - 2.5 m) 30 % (0.35 - 4 m)	remote teach, IO-Link, AppGUI	2.80 ms	300 mm	60	DS4-05-0300-S08-JZ (957650010)	DS4-05-0300-S12-JE (957650029)
			3.70 ms	450 mm	90	DS4-05-0450-S08-JZ (957650011)	DS4-05-0450-S12-JE (957650030)
			4.60 ms	600 mm	120	DS4-05-0600-S08-JZ (957650012)	DS4-05-0600-S12-JE (957650031)
			5.50 ms	750 mm	150	DS4-05-0750-S08-JZ (957650013)	DS4-05-0750-S12-JE (957650032)
			6.40 ms	900 mm	180	DS4-05-0900-S08-JZ (957650014)	DS4-05-0900-S12-JE (957650033)
			7.30 ms	1050 mm	210	DS4-05-1050-S08-JZ (957650015)	DS4-05-1050-S12-JE (957650034)
			8.20 ms	1200 mm	240	DS4-05-1200-S08-JZ (957650016)	DS4-05-1200-S12-JE (957650035)
			9.10 ms	1350 mm	270	DS4-05-1350-S08-JZ (957650017)	DS4-05-1350-S12-JE (957650036)
			10.00 ms	1500 mm	300	DS4-05-1500-S08-JZ (957650018)	DS4-05-1500-S12-JE (957650037)
			10.90 ms	1650 mm	330	DS4-05-1650-S08-JZ (957650019)	DS4-05-1650-S12-JE (957650038)
			11.80 ms	1800 mm	360	DS4-05-1800-S08-JZ (957650020)	DS4-05-1800-S12-JE (957650039)
			12.70 ms	1950 mm	390	DS4-05-1950-S08-JZ (957650021)	DS4-05-1950-S12-JE (957650040)
			13.60 ms	2100 mm	420	DS4-05-2100-S08-JZ (957650022)	DS4-05-2100-S12-JE (957650041)
			14.50 ms	2250 mm	450	DS4-05-2250-S08-JZ (957650023)	DS4-05-2250-S12-JE (957650042)
			15.40 ms	2400 mm	480	DS4-05-2400-S08-JZ (957650024)	DS4-05-2400-S12-JE (957650043)
			16.30 ms	2550 mm	510	DS4-05-2550-S08-JZ (957650025)	DS4-05-2550-S12-JE (957650044)
			17.20 ms	2700 mm	540	DS4-05-2700-S08-JZ (957650026)	DS4-05-2700-S12-JE (957650045)
18.10 ms	2850 mm	570	DS4-05-2850-S08-JZ (957650027)	DS4-05-2850-S12-JE (957650046)			
19.00 ms	3000 mm	600	DS4-05-3000-S08-JZ (957650028)	DS4-05-3000-S12-JE (957650047)			

AVAILABLE MODELS

DS4 Standard

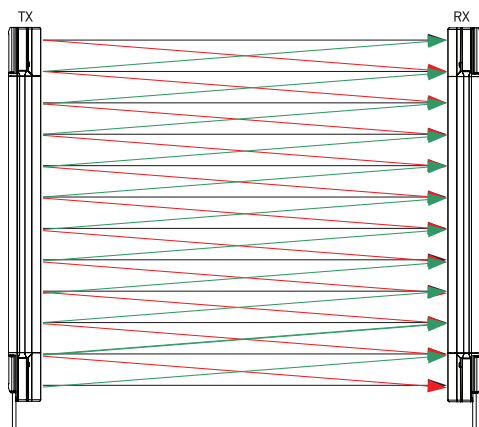
DETECTION/MEASUREMENT AREA SENSORS

Distance between beams	Nominal sensing distance	Sensitivity adjustment	Response time	Controlled height	Beams number	Output type	
						PNP or NPN or Push-Pull , 0...10 V, 4...20 mA, IO-Link, RS485	PNP or NPN or Push-Pull , 0...10 V, 4...20 mA, IO-Link, Ethernet TCP/IP
10 mm	0.2 ... 7 m Transparent objects (T = 0...50 °C; H ≤ 1.5 m): 10% (0.35 - 1.5 m) 20% (0.35 - 2.5 m) 30 % (0.35 - 4 m)	remote teach, IO-Link, AppGUI	1.90 ms	300 mm	30	DS4-10-0300-S08-JZ (957650057)	DS4-10-0300-S12-JE (957650076)
			2.35 ms	450 mm	45	DS4-10-0450-S08-JZ (957650058)	DS4-10-0450-S12-JE (957650077)
			2.80 ms	600 mm	60	DS4-10-0600-S08-JZ (957650059)	DS4-10-0600-S12-JE (957650078)
			3.25 ms	750 mm	75	DS4-10-0750-S08-JZ (957650060)	DS4-10-0750-S12-JE (957650079)
			3.70 ms	900 mm	90	DS4-10-0900-S08-JZ (957650061)	DS4-10-0900-S12-JE (957650080)
			4.15 ms	1050 mm	105	DS4-10-1050-S08-JZ (957650062)	DS4-10-1050-S12-JE (957650081)
			4.60 ms	1200 mm	120	DS4-10-1200-S08-JZ (957650063)	DS4-10-1200-S12-JE (957650082)
			5.05 ms	1350 mm	135	DS4-10-1350-S08-JZ (957650064)	DS4-10-1350-S12-JE (957650083)
			5.50 ms	1500 mm	150	DS4-10-1500-S08-JZ (957650065)	DS4-10-1500-S12-JE (957650084)
			5.95 ms	1650 mm	165	DS4-10-1650-S08-JZ (957650066)	DS4-10-1650-S12-JE (957650085)
			6.40 ms	1800 mm	180	DS4-10-1800-S08-JZ (957650067)	DS4-10-1800-S12-JE (957650086)
			6.85 ms	1950 mm	195	DS4-10-1950-S08-JZ (957650068)	DS4-10-1950-S12-JE (957650087)
			7.30 ms	2100 mm	210	DS4-10-2100-S08-JZ (957650069)	DS4-10-2100-S12-JE (957650088)
			7.75 ms	2250 mm	225	DS4-10-2250-S08-JZ (957650070)	DS4-10-2250-S12-JE (957650089)
			8.20 ms	2400 mm	240	DS4-10-2400-S08-JZ (957650071)	DS4-10-2400-S12-JE (957650090)
			8.65 ms	2550 mm	255	DS4-10-2550-S08-JZ (957650072)	DS4-10-2550-S12-JE (957650091)
			9.10 ms	2700 mm	270	DS4-10-2700-S08-JZ (957650073)	DS4-10-2700-S12-JE (957650092)
			9.55 ms	2850 mm	285	DS4-10-2850-S08-JZ (957650074)	DS4-10-2850-S12-JE (957650093)
10.00 ms	3000 mm	300	DS4-10-3000-S08-JZ (957650075)	DS4-10-3000-S12-JE (957650094)			

AVAILABLE MODELS

Distance between beams	Nominal sensing distance	Sensitivity adjustment	Response time	Controlled height	Beams number	Output type	
						PNP or NPN or Push-Pull , 0...10 V, 4...20 mA, IO-Link, RS485	PNP or NPN or Push-Pull , 0...10 V, 4...20 mA, IO-Link, Ethernet TCP/IP
25 mm	0.2 ... 13 m	remote teach, IO-Link, AppGUI	1.36 ms	300 mm	12	DS4-25-0300-S08-JZ (957650104)	DS4-25-0300-S12-JE (957650123)
			1.54 ms	450 mm	18	DS4-25-0450-S08-JZ (957650105)	DS4-25-0450-S12-JE (957650124)
			1.72 ms	600 mm	24	DS4-25-0600-S08-JZ (957650106)	DS4-25-0600-S12-JE (957650125)
			1.90 ms	750 mm	30	DS4-25-0750-S08-JZ (957650107)	DS4-25-0750-S12-JE (957650126)
			2.08 ms	900 mm	36	DS4-25-0900-S08-JZ (957650108)	DS4-25-0900-S12-JE (957650127)
			2.26 ms	1050 mm	42	DS4-25-1050-S08-JZ (957650109)	DS4-25-1050-S12-JE (957650128)
			2.44 ms	1200 mm	48	DS4-25-1200-S08-JZ (957650110)	DS4-25-1200-S12-JE (957650129)
			2.62 ms	1350 mm	54	DS4-25-1350-S08-JZ (957650111)	DS4-25-1350-S12-JE (957650130)
			2.80 ms	1500 mm	60	DS4-25-1500-S08-JZ (957650112)	DS4-25-1500-S12-JE (957650131)
			2.98 ms	1650 mm	66	DS4-25-1650-S08-JZ (957650113)	DS4-25-1650-S12-JE (957650132)
			3.16 ms	1800 mm	72	DS4-25-1800-S08-JZ (957650114)	DS4-25-1800-S12-JE (957650133)
			3.34 ms	1950 mm	78	DS4-25-1950-S08-JZ (957650115)	DS4-25-1950-S12-JE (957650134)
			3.52 ms	2100 mm	84	DS4-25-2100-S08-JZ (957650116)	DS4-25-2100-S12-JE (957650135)
			3.70 ms	2250 mm	90	DS4-25-2250-S08-JZ (957650117)	DS4-25-2250-S12-JE (957650136)
			3.88 ms	2400 mm	96	DS4-25-2400-S08-JZ (957650118)	DS4-25-2400-S12-JE (957650137)
			4.06 ms	2550 mm	102	DS4-25-2550-S08-JZ (957650119)	DS4-25-2550-S12-JE (957650138)
			4.24 ms	2700 mm	108	DS4-25-2700-S08-JZ (957650120)	DS4-25-2700-S12-JE (957650139)
4.42 ms	2850 mm	114	DS4-25-2850-S08-JZ (957650121)	DS4-25-2850-S12-JE (957650140)			
4.60 ms	3000 mm	120	DS4-25-3000-S08-JZ (957650122)	DS4-25-3000-S12-JE (957650141)			

CROSSED BEAMS



Model Distance between beams	Crossed beam (minimum distance)
DS4-05-****-S**_** 5 mm	≥ 300 mm
DS4-10-****-S**_** 10 mm	≥ 700 mm
DS4-25-****-S**_** 25 mm	No crossed beams

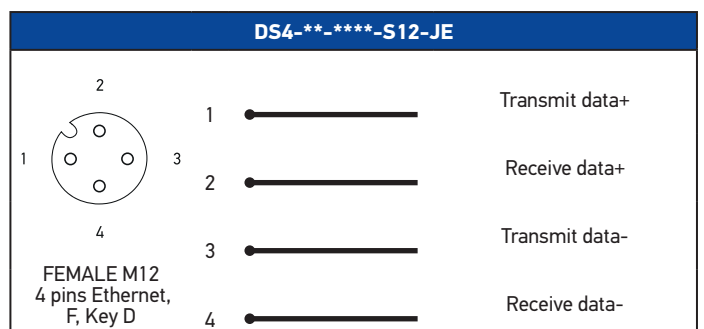
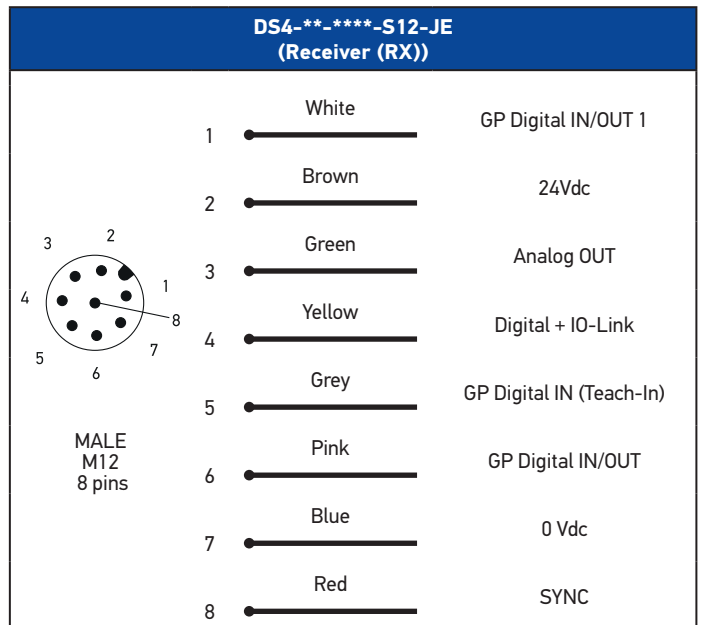
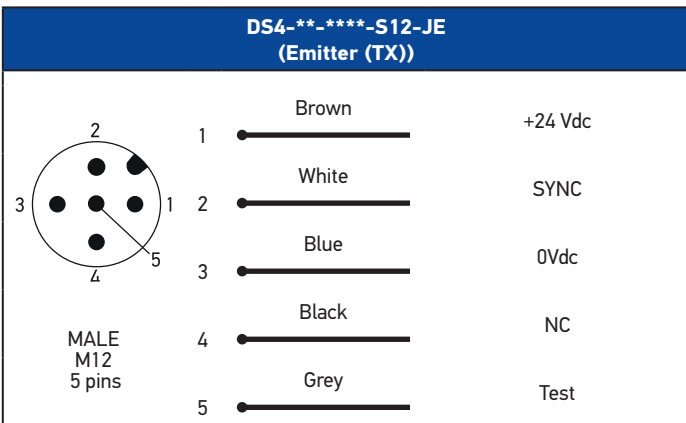
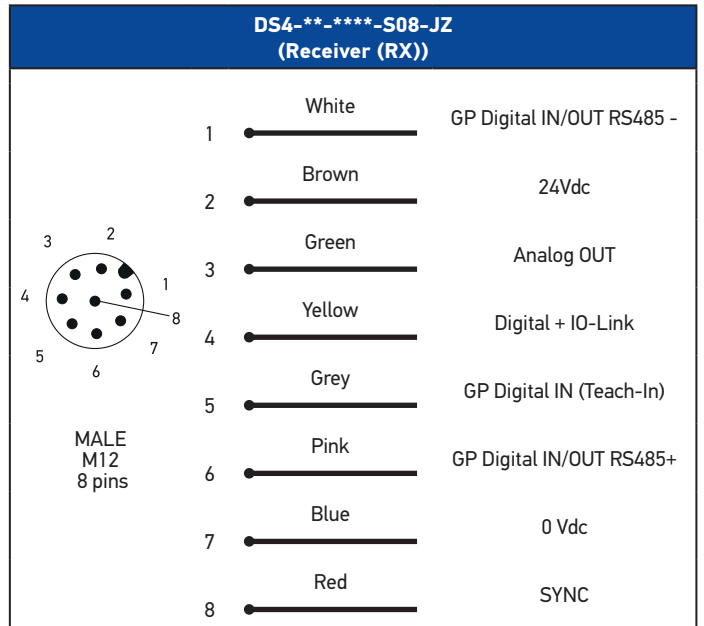
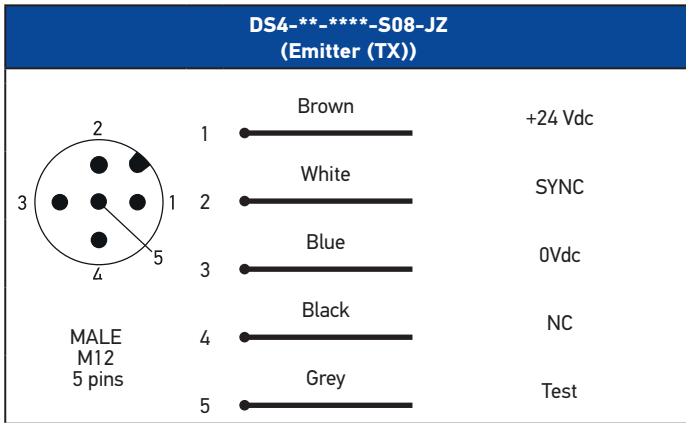
MINIMUM DETECTABLE OBJECT

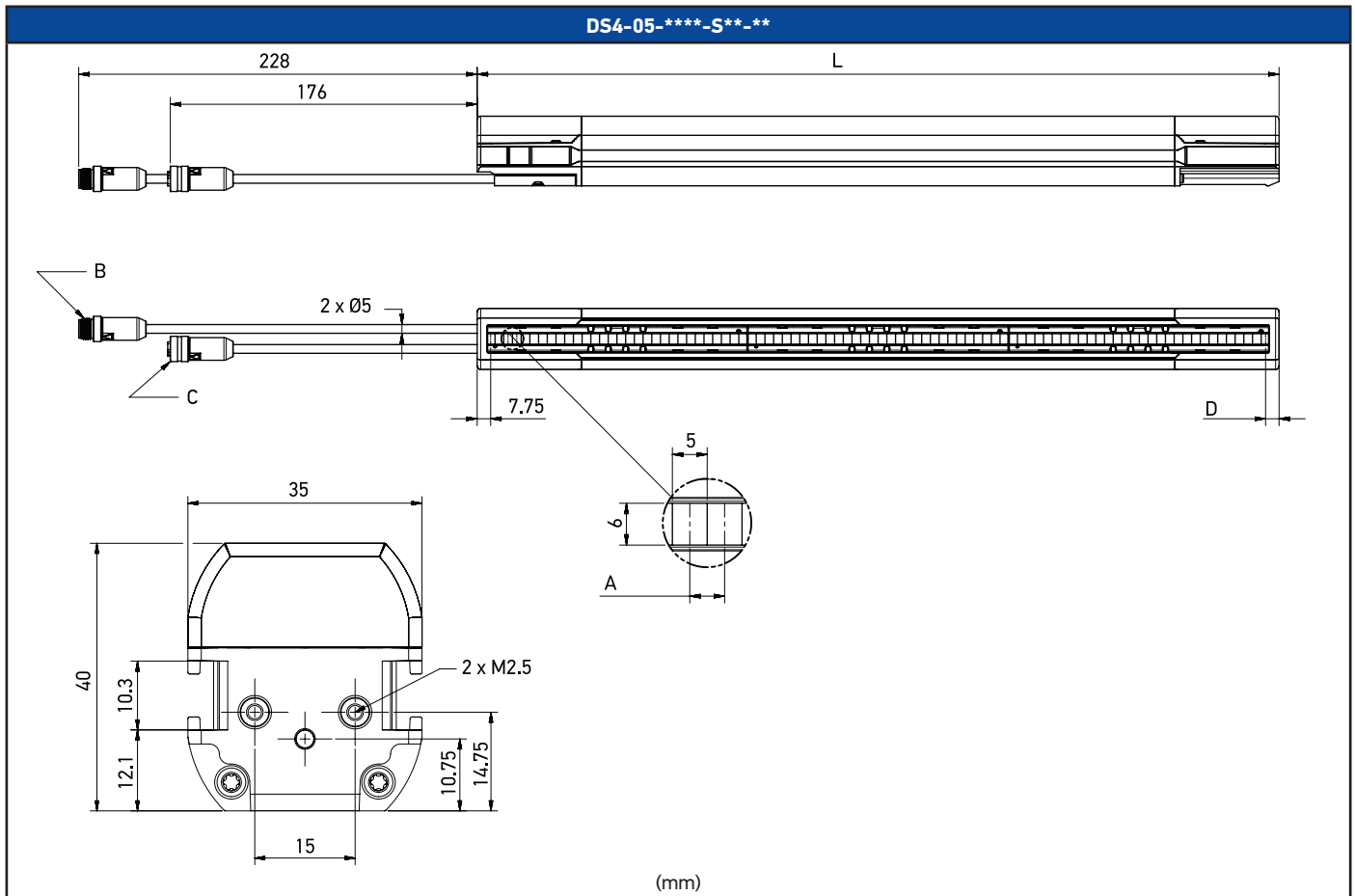
DS4 Standard

DETECTION/MEASUREMENT AREA SENSORS

	Measurement	Detection with teach	Detection without teach
DS4-05-****-S**_**	5 mm 2.5 mm (Augmented Resolution Mode) T = 0...50 °C; H ≤ 1.5 m	≥ 3.5 mm	10 mm
DS4-10-****-S**_**	10 mm	10 mm	14 mm
DS4-25-****-S**_**	25 mm	25 mm	25 mm

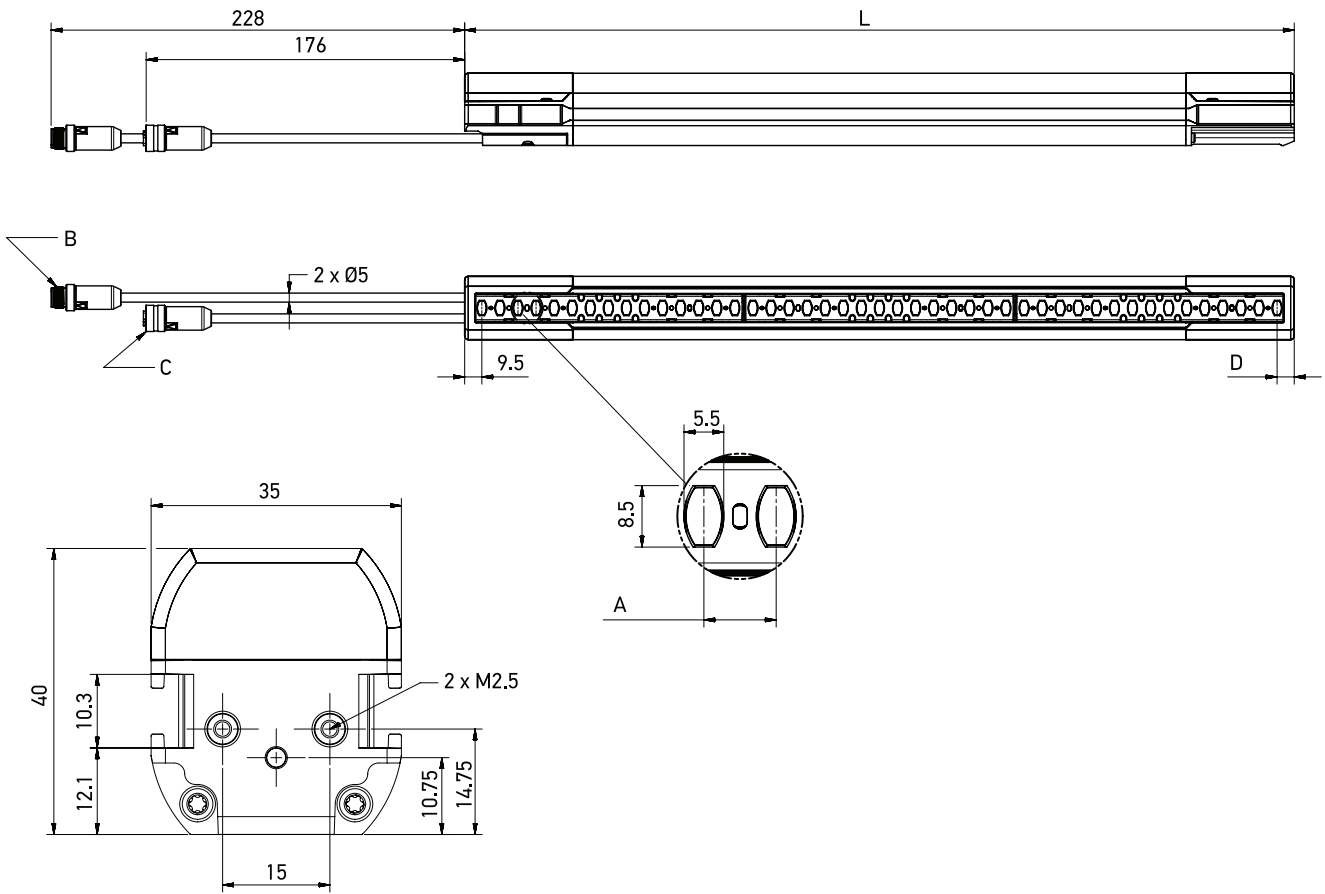
CONNECTIONS





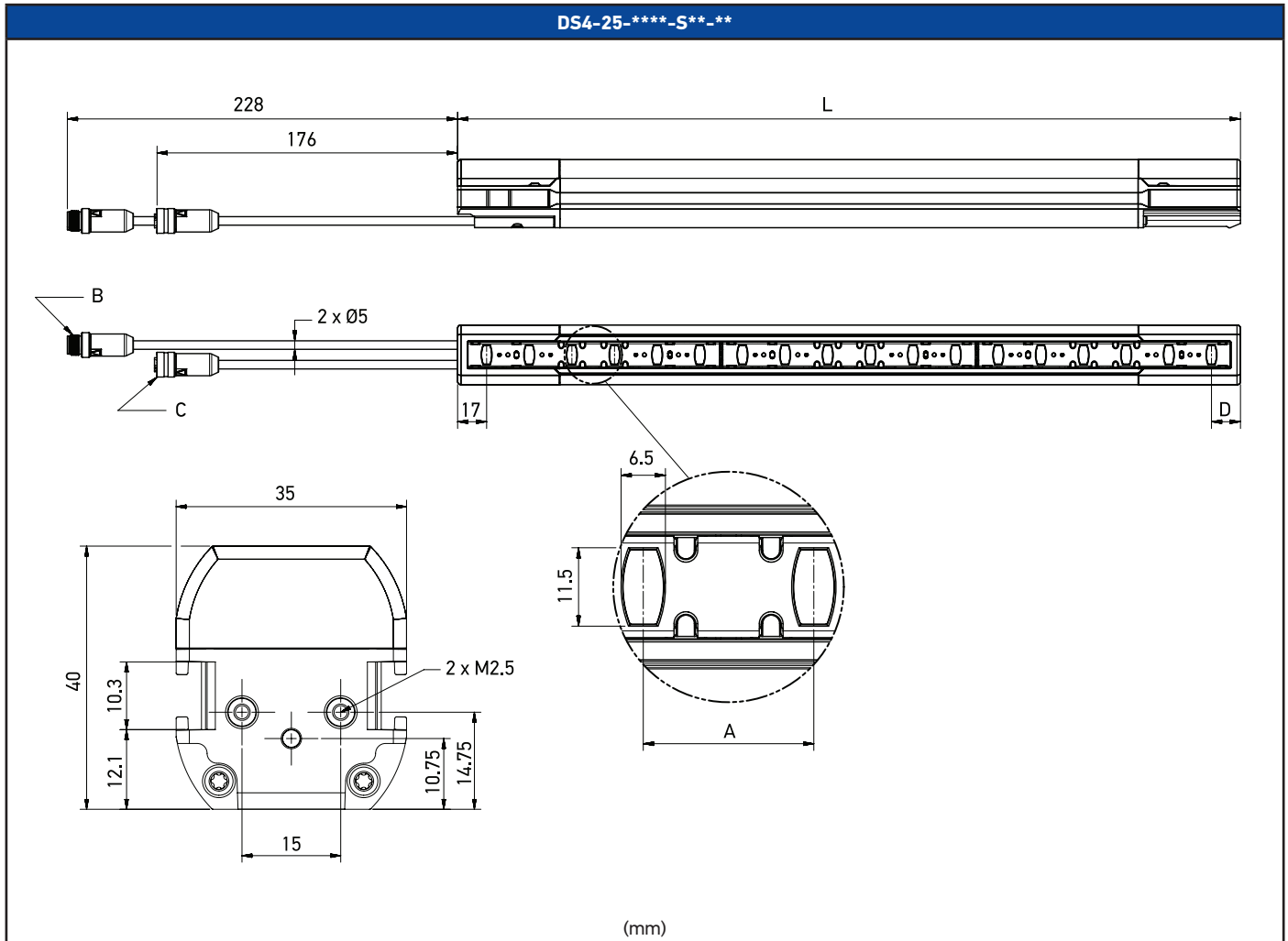
Models	A	B	C	D (mm)	L (mm)	
DS4-05-0300-S**-J*				7.75	310.5	
DS4-05-0450-S**-J*					460.5	
DS4-05-0600-S**-J*					610.5	
DS4-05-0750-S**-J*					760.5	
DS4-05-0900-S**-J*					910.5	
DS4-05-1050-S**-J*					1060.5	
DS4-05-1200-S**-J*					1210.5	
DS4-05-1350-S**-J*					1360.5	
DS4-05-1500-S**-J*					1510.5	
DS4-05-1650-S**-J*	Pitch 5	M12 x 1 (external thread)	M12 x 1 (internal thread) - Only "JE" models		1660.5	
DS4-05-1800-S**-J*					1810.5	
DS4-05-1950-S**-J*					10.25	1963
DS4-05-2100-S**-J*						2113
DS4-05-2250-S**-J*						2263
DS4-05-2400-S**-J*				2413		
DS4-05-2550-S**-J*				2563		
DS4-05-2700-S**-J*				2713		
DS4-05-2850-S**-J*				2863		
DS4-05-3000-S**-J*				3013		

DS4-10-****-S**-**



(mm)

Models	A	B	C	D (mm)	L (mm)
DS4-10-0300-S**-J*				9.5	309
DS4-10-0450-S**-J*					459
DS4-10-0600-S**-J*					609
DS4-10-0750-S**-J*					759
DS4-10-0900-S**-J*					909
DS4-10-1050-S**-J*					1059
DS4-10-1200-S**-J*					1209
DS4-10-1350-S**-J*					1359
DS4-10-1500-S**-J*					1509
DS4-10-1650-S**-J*	Pitch 10	M12 x 1 (external thread)	M12 x 1 (internal thread) - Only "JE" models		1659
DS4-10-1800-S**-J*				1809	
DS4-10-1950-S**-J*				12	1961.5
DS4-10-2100-S**-J*					2111.5
DS4-10-2250-S**-J*					2261.5
DS4-10-2400-S**-J*					2411.5
DS4-10-2550-S**-J*					2561.5
DS4-10-2700-S**-J*					2711.5
DS4-10-2850-S**-J*					2861.5
DS4-10-3000-S**-J*					3011.5



Models	A	B	C	D (mm)	L (mm)
DS4-25-0300-S**-J*					309
DS4-25-0450-S**-J*					459
DS4-25-0600-S**-J*					609
DS4-25-0750-S**-J*					759
DS4-25-0900-S**-J*					909
DS4-25-1050-S**-J*				17	1059
DS4-25-1200-S**-J*					1209
DS4-25-1350-S**-J*					1359
DS4-25-1500-S**-J*					1509
DS4-25-1650-S**-J*	Pitch 25	M12 x 1 (external thread)	M12 x 1 (internal thread) - Only "JE" models		1659
DS4-25-1800-S**-J*					1809
DS4-25-1950-S**-J*					1961.5
DS4-25-2100-S**-J*					2111.5
DS4-25-2250-S**-J*					2261.5
DS4-25-2400-S**-J*					2411.5
DS4-25-2550-S**-J*				19.5	2561.5
DS4-25-2700-S**-J*					2711.5
DS4-25-2850-S**-J*					2861.5
DS4-25-3000-S**-J*					3011.5

	Model	Description	Article code	
Cables	CS-A1-03-U-03	Cable M12 5 poles axial female unshielded 3m UL 2464	95ASE1170	
	CS-A1-03-U-05	Cable M12 5 poles axial female unshielded 5m UL 2464	95ASE1180	
	CS-H2-03-B-01	Cascade cable for SH4 1 m	95ASE0031	
	CS-H2-03-B-03	Cascade cable for SH4 3 m	95ASE0032	
	CS-H2-03-B-10	Cascade cable for SH4 10 m	95ASE0033	
	CS-A1-06-B-03	CS-A1-06-B-03 = M12 8-p axial 3m	95ACC2230	
	CS-A1-06-B-05	CS-A1-06-B-05 = M12 8-p axial 5m	95ACC2240	
	CS-A1-06-B-10	CS-A1-06-B-10 M12 8 pins 10 m black	95ACC2250	
	CV-A1-26-B-03	Cable M12 8 poles axial female shielded 3m	95ACC1510	
	CV-A1-26-B-05	Cable M12 8 poles axial female shielded 5m	95ACC1520	
	CV-A1-26-B-10	Cable M12 8 poles axial female shielded 10m	95ACC1530	
	CV-A1-26-B-15	Cable M12 8 poles axial female shielded 15m	95ACC2080	
	CV-A1-26-B-25	Cable M12 8 poles axial female shielded 25m	95ACC2100	
	CS-Y2-45-B-002	Y Cable M12 8p female - M12 5p Female + M12 4p Male	95ASE0102	
	CS-A1-06-B-NC	M12 8-p axial PG	95ACC2550	
	CD12M/0H-050A3	Connect.M12-F,5 poles-5m,PVC,Axial	CD12M/0H-050A3	
	CD12M/0H-100A3	Connect.M12-F,5 poles-10m,PVC,Axial	CD12M/0H-100A3	
	CD12M/0E-050A1	Connect.M12-F,8 poles-5m,PVC,Axial	CD12M/0E-050A1	
	CD12M/0E-100A1	Connect.M12-F,8 poles-10m,PVC,Axial	CD12M/0E-100A1	
	CD12M/0E-150A1	Connect.M12-F,8 poles-15m,PVC,Axial	CD12M/0E-150A1	
	CDP12/0B-010AA	M12-F-Axial, 4p,M12-M-Axial,PVC,1 m	CDP12/0B-010AA	
	CDP12/0B-030AA	M12-F-Axial, 4p,M12-M-Axial,PVC,3 m	CDP12/0B-030AA	
	CDP12/0B-050AA	M12-F-Axial, 4p,M12-M-Axial,PVC,5 m	CDP12/0B-050AA	
	CDP12/0B-100AA	M12-F-Axial, 4p,M12-M-Axial,PVC,10 m	CDP12/0B-100AA	
	CV12/0B-00A	Connect.M12-M-Axial,4 p,Field attach.	CV12/0B-00A	
	CV12/0B-00B	Connect.M12-M-90°,4 p,Field attach.	CV12/0B-00B	
	CV12/0H-00A	Connect.M12-M-Axial,5 p,Field attach.	CV12/0H-00A	
	CS-A1-06-U-03	Cable M12 8 poles axial female unshielded 3m UL 2464	95ASE1220	
	CS-A1-06-U-05	Cable M12 8 poles axial female unshielded 5m UL 2464	95ASE1230	
	CS-A1-06-U-10	Cable M12 8 poles axial female unshielded 10m UL 2464	95ASE1240	
	CS-A1-06-U-15	Cable M12 8 poles axial female unshielded 15m UL 2464	95ASE1250	
	CS-A1-06-U-25	Cable M12 8 poles axial female unshielded 25m UL 2464	95ASE1260	
	CS-A1-03-U-10	Cable M12 5 poles axial female unshielded 10m UL 2464	95ASE1190	
	CS-A1-03-U-15	Cable M12 5 poles axial female unshielded 15m UL 2464	95ASE1200	
	CAB-ETH-M01	M12-RJ45 IP67 ethernet cable 1m	93A051346	
	CAB-ETH-M03	M12-RJ45 IP67 ethernet cable 3m	93A051347	
	CS-I1-02-B-03	CS-I1-02-B-03 4p M12-M/M12-F axial 3m bk	95ACC0009	
	CS-M1-02-B-03	CS-M1-02-B-03 5p M12-F Lcode axial 3m gr	95ACC0007	
	CAB-ETH-M05	M12-RJ45 IP67 ethernet cable 5m	93A051348	
	CAB-ETH-M10	M12-RJ45 IP67 ethernet cable 10m	93A051391	
	IO-Link masters	CBX-8IOL-PNIO	8P IOL M12 PROFINET MASTER	95ACC8190
		CBX-8IOL-EIP	8P IOL M12 EIP MASTER	95ACC8180
	Mounting brackets	ST-KSTD	Metal angled brackets 4 pcs kit for SG/SH4	95ACC1670
		ST-K40R	Orientable supports 4 pcs kit to be used with ST-KSTD	95ACC1680
		ST-K4AV	Anti vibration supports 4 pcs kit to be used with ST-KSTD	95ACC1700
ST-K6AV		Anti vibration supports 6 pcs kit to be used with ST-KSTD	95ACC1710	
ST-KP4MP		Plastic angled brackets 4 pcs kit	95ASE1100	
ST-K4ROT-SH		Rotating brackets for SH4 4 pcs	95ASE0042	

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