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FIAT CHRYSLER AUTOMOBILES

NAFTA POWERTRAIN

Electronic Sensors and Control System Components Guidelines / Program Book

FCA NAFTA Powertrain Projects

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Any questions or comments with respect to this specification should be directed to the project engineer for the specific project in question.

Revision Date	Version No.	Document Name	Revision	Paragraph Affected	Revised By
07/01/2006	1.0	Project_Book_-_IFM_Efector	First Version Released	All	KM, CG
01/01/2007	2.0	Project_Book_-_IFM_Efector	Edited Unnecessary Data Sheets	All	JO, CG
07/01/2007	2.5	Project_Book_-_IFM_Efector	Added AS-I Modules & Photoelectric Sensors	2.1.1 2.3.2.3	JO, CG
01/01/2008	3.0	Project_Book_-_IFM_Efector	Removed datasheets within document Added UL Listing Added Photo Sensors Added Pressure Sensors Added Flow Sensors Added Level Sensors Added Temp Sensors Added Inspection Sensors Removed Cables Added Mounting Hardware	All 2.0 2.3.2.1 & 2.3.2.3 2.3.3.4 2.3.4.1 2.3.5.3 2.3.6.2 2.3.8.1 2.4.3 & 2.4.4 2.5	JO, CG
07/01/2008	3.5	Project_Book_-_IFM_Efector	Removed Obsolete Module AC5001 Added AS-I Modules Added Safety At Work Added Photoelectric Sensors Added Pressure Sensors Added Flow Sensors Added Level Sensors Added Condition Monitors Added Inspection Sensors	2.1.1 2.1.1 2.2 2.3.2.2 2.3.2.3 2.3.4.1 2.3.5.6 2.3.7.1 2.3.8.1	JO, CG
01/01/2009	4.0	Project_Book_-_IFM_Efector	Added Chrysler India Account Manager Added Multi Code Reader	1.4 2.3.9.2	JO, CG
07/01/2009	4.5	Project_Book_-_IFM_Efector	None	None	JO, CG
01/01/2010	5.0	Project_Book_-_IFM_Efector	Changed Chrysler Direct Contacts Replaced Obsolete U71007 with E70481 Replaced Obsolete E7020S with newer E7040S SAW software version Replaced becoming Obsolete IFC245 with IFC263 Replaced becoming Obsolete IGC211 with IGC249 Added OPU & OPL optical fork and angle Sensors Added SM & SU Flow Sensors Added LK7024 Level Sensor	1.0 2.1.1 2.2 2.3.1.2 2.3.1.3 2.3.2.8 & 2.3.2.9 2.3.4.1 2.3.5.3 2.3.5.6	KM, MS

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Revision Date	Version No.	Document Name	Revision	Paragraph Affected	Revised By
			Change obsolete LR3000, LR7000 & LR8000 parts with LR7300, LR8000 & LR8300 Added longer probes for new LRs – E43207, E43208, E43209 & E43210 Replaced Obsolete TN2530 with TN2531 Replaced Obsolete TN7530 with TN7531 Replaced Obsolete TR7430 with TR7432 Removed Obsolete VE1002 & VE1102 Replaced Obsolete E2D200 replaced with E2D102 Removed Service and Support, ifm USA and Global local offices	2.3.5.6 2.3.6.1 2.3.6.1 2.3.6.2 2.3.7.1 2.3.8.1 3.0, 3.1 & 3.2	
07/01/2010	5.5	Project_Book_-_IFM_Efector	None	None	MS, KM
01/01/2011	6.0	Project_Book_-_IFM_Efector	Removed Components for AS-I bus section Removed Safety at Work section All other sections renumbered as a result Added IEC200 Added IFC258 Added IGC213 & IGC248 Added IIC224 Added MK5107, MK5139, MK5304 & MK5314 Solid state cylinder switches Replaced Obsolete OB5021 & OB5026 with new OBF500 & OBF5004 Added PQ7809 & PQ7834 Removed RFID (old section #) Replaced obsolete E10278 with EBC015 Replaced obsolete E10279 with EBC027 Replaced obsolete E10282 with EBC023 Replaced obsolete E10283 with EBC035 Added additional single ended and patch cables	2.1 2.2 2.1.1.1 2.1.1.2 2.1.1.3 2.1.1.4 2.1.1.6 2.1.2.7 2.1.3.3 2.3.1.9 2.2.1 2.2.1 2.2.1 2.2.1 2.2.2	MS
01 July 2011	6.5	Project_Book_-_IFM_Efector	Added IE5351 Added IE5352 Added IF5775 Added LMT100 Added LMT110	2.1.1.1 2.1.1.1 2.1.1.2 2.1.5.7 2.1.5.7	Mike Sutherland
01 January 2011	7.0	Project_Book_-_IFM_Efector	Added IFT245 Added IGT249 Added IIT231	2.1.1.2 2.1.1.3 2.1.1.4	Mike Sutherland

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			Non-Contact safety switches	2.1.1.9	
01 July 2012	7.5	Project_Book_-_IFM_Efector	Updated or Changed contact information for Japan, Germany & Asia Added IF5811 Added PNI022 Added E11566 Added PS7570	1.0 2.1.1.1 2.1.3.6 2.1.3.6 2.1.3.7	Mike Sutherland
01 January 2013	8.0	Project_Book_-_IFM_Efector	Added IO Link notation to the following products PN700x LRxxxx TNxxxx TRxxxx Updated LR7300 to LR7000 Removed LR8300 Added LR3000 Added tray rated cables	 2.1.3.1 2.1.5.6 2.1.6.1 2.1.6.2 2.1.5.6 2.1.5.6 2.1.5.6 2.2.4	Mike Sutherland
01 July 1 2013	8.5	Project_Book_-_IFM_Efector	Added flow meter section and moved SM and SU parts here. Added SM9 & SM2 range switches. Removed LK702* level switches. Renumber sections moving forward Added note about needing BSP version of the coaxial tube Removed VE****, VES001, E11572. Added newer VSA00*, VSE100 & EC2080	2.1.4.1 2.1.5.3 2.1.5.5 2.1.7.1	Mike Sutherland
01 January 2014	9.0	Project_Book_-_ifm_efector	Updated contact information for Mexico Added proximity switches 8mm IE5288 12mm IFC207 & IFC208, NC 18mm IGC207 & IGC208, NC 30mm (metal) and IIS208, NC Cube IMC5128, IM5130 & IM5131 (correction factor 1) Replaced capacitive switch KI5209 with KI5085 & KI5087 Added safety switch GG851S Added photoelectric switch O6x301, removed O5H201 Added analog pressure (PN2) Added point level switch LMT121 Added Pixel sensor (O2V) Added proximity switch mounting sleeves	1.0 2.1.1.1 2.1.1.2 2.1.1.3 2.1.1.4 2.1.1.5 2.1.1.8 2.1.1.9 2.1.2.2 2.1.3.8 2.1.5.6 2.1.8.3 2.3	Mike Sutherland
01 July 2014	9.5	Project_Book_-_ifm_efector	Updated filename from Project_Book_-_Ifm_Efector to Project_Book_-_ifm_efector Updated incorrect O6S301	 2.1.2.2	Mike Sutherland

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Revision Date	Version No.	Document Name	Revision	Paragraph Affected	Revised By
			part number to correct O6T301 number.		
01 January 2015	10.0	Project_Book_-_ifm_efector	Added IIT219 Added IM* switches with N.C. output Added new PN7 series with color display Added air flow switches (SD) Added LMC502 level switch Added brackets for O6 switches	2.1.1.4 2.1.1.5 2.1.3.2 2.1.4.3 2.1.5.7 2.3	Mike Sutherland
01 July 2015	10.5	Project_Book_-_ifm_efector	Updated Chrysler to FCA NAFTA throughout Added IO Link notes to table of contents Reorganized photoelectric section. Added O5D100, 101, 150 & 151. Moved O1D to below M30 Reorganized photoelectric section. Replaced dovetail mount OJ50xx with OJ51xx thru-hole types. Added OID2xx lasers. Removed old PN700x types Removed old PN500x types Removed PQ7xxx types Removed PK65xx types Replaced old PN20 with new style Added SV vortex flow meters Removed LMT121 Added point level LMT probes Added interface options to O2D products Added interface options to O2I products Added interface options to O2I products Added panel touch screen display Added RFID Removed grey PLTC cable, replaced with EVT IP69K washdown rated cable Added T splitters Added brackets E20873, E20874 & E20875 for OI's Added mounting brackets E2D401 and E2D402 for UOB015.	All 2.1.2 2.1.2.2 2.1.2.5 2.1.2.6 2.1.2.7 2.1.3.1 2.1.3.3 2.1.3.4 2.1.3.5 2.1.3.5 2.1.4.2 2.1.5.6 2.1.5.7 2.1.8.1 2.1.8.2 2.1.8.3 2.1.8.4 2.1.8.5 2.2.3 2.2.4 2.3 2.3	Mike Sutherland
01 January 2016	11.0	Project_Book_-_ifm_efector	Added ifm contact information for France, Spain, Korea and Christian Heider for FCA NAFTA Removed II5904	1.0 2.1.1.4	Mike Sutherland

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Revision Date	Version No.	Document Name	Revision	Paragraph Affected	Revised By
01 January 2016 (Continued)	11.0	Project_Book_-_ifm_efector	Added PN2096/7 and PN2596/7 analog pressure Added SM2004 & SM9004 analog flow & temperature switches. Updated O2I20x code readers with new O2I30x Corrected AL2401 IO Link block. Added T-Coded power cables to RFID reader section.	2.1.3.5 2.1.4.2 2.1.8.2 2.4.1 2.4.1	Mike Sutherland
01 July 2016	11.5	Project_Book_-_ifm_efector	Updated all numbering to add links as required. Updated ifm contact information page. Updated K=1 proximity switches to 12mm, 18mm and 30mm sections. Added G versions of airflow meters, removed R versions Added LR2050 Updated TNxxxx Updated TRxxxx Added visible red O2I Removed RFID products Updated company name to ifm_efector using small letters	Full document Before Table of contents 1b, 1c, & 1d 4d 5e 6a 6b 8b Na Title page	Mike Sutherland
15 August 2016	11.5	Project_Book_-_ifm_efector	Removed IO Links Masters and hubs	11	Mike Sutherland
01 January 2017	12.0	Project_Book_-_ifm_efector	Added SA flow meters to Calorimeric flow switches and meters Updated contact information for ifm Japan	4a	Mike Sutherland

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Table of Contents







1.	INDUCTIVE AND CAPACITIVE PROXIMITY SENSORS.....	10
1a.	8mm Threaded Tubular – IE Family	10
1b.	12mm Threaded Tubular Housing – IF Family	10
1c.	18mm Threaded Tubular Housing – IG Family	11
1d.	30mm Threaded Tubular Housing – II Family	12
1e.	Cube-Style Plastic Housing – IM Family	12
1f.	Solid State Cylinder Switches.....	13
1g.	Quarter-Turn Valve Position Feedback Sensor -- IND	13
1h.	Capacitive 30mm Threaded metal Housing -- KI.....	13
1i.	Non-Contact Safety Switches	14
2.	PHOTOELECTRIC SENSORS	15
2a.	M18 Threaded Stainless Steel Housing – OG Family	15
2b.	Rectangular Plastic Housing – O6 and O5 Family IO LINK	17
2c.	M18 Threaded Stainless Steel Housing, Integrated Right Angle Lens – OG90 Family	18
2d.	M30 Mount with metal housing – OI Family	18
2e.	Laser Distance Sensor – O1D	19
2f.	Miniature Rectangular Plastic Housing, Laser – OJ Family	19
2g.	M30 Threaded Stainless Steel Housing Lasers– OI Family IO LINK	20
2h.	Multi-Channel Fiber Optic Controller – OO Family	20
2i.	Fiber Optic Amplifier – OB Family	20
2j.	Optical Fork Sensors – OPU Family.....	20
2k.	Optical Angle Sensors – OPL Family	21
3.	PRESSURE SENSORS	21
3a.	Dual Switching Output IO LINK	21
3b.	Analog Output, DC, G1/4 BSPP Process Fitting, M12 Connector – PA Family	21
3c.	PNI Differential Pressure Family.....	22
3d.	Part Seated Switch	22
3e.	Dual Switching or Analog Output IO LINK.....	22
4.	FLOW SENSORS & METERS	23
4a.	Calorimetric Flow switches and Meters, Single or Dual Switching Outputs, DC, M12 Connector IO LINK	23
4b.	Flow Meters with numerical display. IO LINK	24
4c.	Air flow Meters with numerical display. IO LINK.....	25
5.	LEVEL SENSORS.....	25
5a.	Analog and Switching Outputs, M12 Connector – LK3 Family.....	25
5b.	Two Switching Outputs, DC, M12 Connector – LK1 Family.....	25
5c.	Four Switching Outputs, DC, 8-pin M12 Connector – LK8 Family	26
5d.	Four Switching PNP Outputs for Level and Temperature, DC, M12 Connector	26
5e.	Guided Wave Radar for Level, DC, M12 Connector. IO LINK	26
5f.	High Frequency Capacitance for point level, DC, M12 Connector, IO Link	27
5g.	High Frequency Capacitance for point level, DC, M12 Connector, IO Link	27
6.	TEMPERATURE SENSORS.....	27
6a.	Self-Contained Temperature Sensor, DC, M12 Connector – TN Family, IO LINK	27
6b.	Temperature Control Monitors, DC, M12 Connector – TR Family, IO LINK	28

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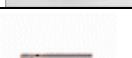

7.	CONDITION MONITORING	28
7a.	Octavis Vibration Monitor.....	28
8.	INSPECTION SENSORS	29
8a.	efector dualis contour inspection sensor – O2D Family	29
8b.	Multi Code Reader, 2D Matrix or Bar Code.....	29
8c.	Pixel Counter sensor	29
8d.	Touch Panel Display	29
9.	WIRING SOLUTIONS	30
9a.	4 pin Single Ended and Patch Cables for with PUR jacket for coolant applications	30
9b.	8-pin M12 and 14-pin M16 Female Cable Assemblies, PUR Jacket.....	31
9c.	4 pin Single Ended and Patch Cables for with PVC jacket for washer applications	31
9d.	4 pin Single Ended and Patch Cables for with PVC jacket for washer applications	32
9e.	Field Attachable Connectors & Tee splitters	32
10.	MOUNTING ACCESSORIES –	33
10a.	Inductive and Photoelectric Sensors.....	33

1. Inductive and Capacitive Proximity Sensors



1a. 8mm Threaded Tubular – IE Family

	Sensing Range	Mounting	Wiring	Output	Miscellaneous	Article Number
	2mm	Flush	3-wire DC PNP	N.O.	M12 connector	IE5318
	4mm	Nonflush	3-wire DC PNP	N.O.	M12 connector	IE5331
	4mm	Nonflush	3-wire DC PNP	N.O.	M12 connector	IE5288
	2mm	Flush	3-wire DC PNP	N.O.	M12 connector, SS face	IEC200
	3mm	Flush	3-wire DC PNP	N.O.	M12 connector	IE5351
	5mm	Nonflush	3-wire DC PNP	N.O.	M12 connector	IE5352







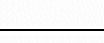

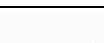
1b. 12mm Threaded Tubular Housing – IF Family

	Sensing Range	Mounting	Wiring	Output	Miscellaneous	Article Number
	4mm	Flush	3-wire DC PNP	N.O.	M12 connector, short body	IFC204
	7mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, short body	IFC205
	4mm	Flush	3-wire DC PNP	N.O.	M12 connector, short body, ceramic face	IFC206
	4mm	Flush	3/2-wire DC PNP	N.O.	M12 connector	IFC210
	4mm	Flush	3-wire DC PNP	N.O.	M12 connector, long body	IF5775
	7mm	Nonflush	3-wire DC PNP	N.O.	M12 connector	IF5811
	2.5mm	Flush	3-wire DC PNP	N.O.	M12 connector, SS face, ferrous only	IFC263
	3mm	Flush	3-wire DC PNP	N.O.	M12 connector, SS face	IFC258
	6mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, SS face	IFT245
	4mm	Flush	3-wire DC PNP	N.C.	M12 connector, short body	IFC207
	7mm	Nonflush	3-wire DC PNP	N.C.	M12 connector, short body	IFC208
	4mm	Flush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IFS289
	10mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IFS290

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	4mm	Flush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IFS285
	10mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IFS286

1c. 18mm Threaded Tubular Housing – IG Family



	Sensing Range	Mounting	Wiring	Output	Miscellaneous	Article Number
	8mm	Flush	3-wire DC PNP	N.O.	M12 connector, short body	IGC204
	12mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, short body	IGC205
	8mm	Flush	3-wire DC PNP	N.O.	M12 connector, short body, ceramic face	IGC206
	8mm	Flush	3/2-wire DC PNP	N.O.	M12 connector	IGC210
	12mm	Nonflush	3-wire DC PNP	N.O.	M12 connector	IGC213
	4.5mm	Flush	3-wire DC PNP	N.O.	M12 connector, SS face, ferrous only	IGC249
	5mm	Flush	3-wire DC PNP	N.O.	M12 connector, SS Face	IGC248
	12mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, SS Face	IGT249
	8mm	Flush	3-wire DC PNP	N.C.	M12 connector, short body	IGC207
	12mm	Nonflush	3-wire DC PNP	N.C.	M12 connector, short body	IGC208
	8mm	Flush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IGS279
	15mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IGS280
	8mm	Flush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IGS277
	15mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IGS278

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1d. 30mm Threaded Tubular Housing – II Family





	Sensing Range	Mounting	Wiring	Output	Miscellaneous	Article Number
	15mm	Flush	3-wire DC PNP	N.O.	M12 connector	IIS742
	22mm	Nonflush	3-wire DC PNP	N.O.	M12 connector	IIS785
	10mm	Flush	3-wire DC PNP	N.O.	M12 connector, SS Face	IIC224
	25mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, SS Face	IIT231
	15mm	Flush	3-wire DC PNP	N.C.	M12 connector	IIS208
	22mm	Nonflush	3-wire DC PNP	N.C.	M12 connector	IIT219
	15mm	Flush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IIS269
	15mm	Flush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IIS267
	30mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, K1 technology	IIS268

1e. Cube-Style Plastic Housing – IM Family


	Sensing Range	Mounting	Wiring	Output	Miscellaneous	Article Number
	20mm	Flush	3-wire DC PNP	N.O.	M12 connector	IM5115
	35mm	Nonflush	3-wire DC PNP	N.O.	M12 connector	IM5116
	40mm	Nonflush	3-wire DC PNP	N.O.	M12 connector	IM5117
	20mm	Flush	4-wire DC PNP	N.O. & N.C.	M12 connector	IM5123
	35mm	Nonflush	4-wire DC PNP	N.O. & N.C.	M12 connector	IM5134
	40mm	Nonflush	4-wire DC PNP	N.O. & N.C.	M12 connector	IM5136
	20mm	Flush	3-wire DC PNP	N.O.	M12 connector, K=1	IM5128
	35mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, K=1	IM5130
	40mm	Nonflush	3-wire DC PNP	N.O.	M12 connector, K=1	IM5131
	20mm	Flush	4-wire DC PNP	N.O. & N.C.	M12 connector, K=1	IM5132
	35mm	Nonflush	4-wire DC PNP	N.O. & N.C.	M12 connector, K=1	IM5133
	40mm	Nonflush	4-wire DC PNP	N.O. & N.C.	M12 connector, K=1	IM5135

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1f. Solid State Cylinder Switches

	Sensing Range	Mounting	Wiring	Output	Miscellaneous	Article Number
	2.8 mT	T Slot	3-wire DC PNP	N.O.	M12 connector, GMR Cell	MK5107
	2.0 mT	T Slot	3-wire DC PNP	N.O.	M12 connector, AMR Cell	MK5139
	2.8 mT	C Slot	3-wire DC PNP	N.O.	M12 connector, AMR Cell, tall	MK5304
	2.8 mT	C Slot	3-wire DC PNP	N.O.	M12 connector, AMR Cell, flush	MK5314

1g. Quarter-Turn Valve Position Feedback Sensor -- IND

	Description	Article Number
	Rectangular housing, 4-wire DC PNP, 2 N.O. outputs, M12 connector	IN5327

1h. Capacitive 30mm Threaded metal Housing -- KI








	Sensing Range	Mounting	Wiring	Output	Miscellaneous	Article Number
	8mm	Flush	DC, PNP	N.O. / N.C.	M12 connector	KI5085
	15mm	Nonflush	DC, PNP	N.O. / N.C.	M12 connector	KI5087

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1i. Non-Contact Safety Switches

Complies with the requirements ISO 13849 1: PL d, IEC 61508: SIL 2, IEC 62061: SILcl 2









The areas of application of these devices shall be determined through risk assessment and compliance with the current FCA NAFTA Functional Safety Requirements. Use of these devices shall be approved by FCA NAFTA Powertrain Project Electrical Engineer and FCA NAFTA Corporate Safety.

	Enable Zone	Mounting	Wiring	Output	Miscellaneous	Article Number
	0.5 – 4 mm	Nonflush	3-wire DC PNP	2 safe outputs	12mm barrel, M12 connector	GF711S
	On: >10mm Off: < 5mm	Flush	3-wire DC PNP	2 safe outputs	18 mm barrel, M12 connector	GG851S
	1 – 5 mm	Flush	3-wire DC PNP	2 safe outputs	18 mm barrel, M12 connector	GG712S
	1 – 8 mm	Nonflush	3-wire DC PNP	2 safe outputs	18 mm barrel, M12 connector	GG711S
	1 – 10 mm	Flush	3-wire DC PNP	2 safe outputs	30 mm barrel, M12 connector	GI712S
	1 – 15 mm	Nonflush	3-wire DC PNP	2 safe outputs	30 mm barrel, M12 connector	GI711S
	10 – 15 mm	Nonflush	3-wire DC PNP	2 safe outputs Sil 3, PL e	Cube style, M12 connector	GM701S
	4 – 20 mm	Nonflush	3-wire DC PNP	2 safe outputs Sil 3, PL e	Cube style, M12 connector	GM705S

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2. Photoelectric Sensors

2a. M18 Threaded Stainless Steel Housing – OG Family





	Function	Sensing Range	Wiring	Output	Miscellaneous	Article Number
	Thru-beam transmitter	20m	2-wire DC	N/A	Red light, M12 connector, no adjustment	OGS200
	Thru-beam transmitter	25m	2-wire DC	N/A	Red light, M12 connector, no adjustment	OGS500
	Thru-beam receiver	20m	3-wire DC PNP	D.O.	Red light, M12 connector, no adjustment	OGE200
	Thru-beam receiver	20m	3-wire DC PNP	L.O.	Red light, M12 connector, no adjustment	OGE201
	Thru-beam receiver	25m	3-wire DC PNP	L.O. / D.O.	Red light, M12 connector, push-button adjustment	OGE500
	Polarized retroreflective	5m	3-wire DC PNP	L.O. / D.O.	Red light, M12 connector, push-button adjustment	OGP500
	Polarized retroreflective	4m	3-wire DC PNP	D.O.	Red light, M12 connector, no adjustment	OGP200
	Polarized retroreflective	4m	3-wire DC PNP	L.O.	Red light, M12 connector, no adjustment	OGP201
	Diffuse	800mm	3-wire DC PNP	L.O. / D.O.	Red light, M12 connector, pushbutton adjustment	OGT500
	Diffuse background suppression	15 -300mm	3-wire DC PNP	L.O. / D.O.	Red light, M12 connector, pushbutton adjustment	OGH500
	Diffuse	600m	3-wire DC PNP	L.O.	Red light, M12 connector, potentiometer adjustment	OGT200
	Diffuse background suppression	15 -250mm	3-wire DC PNP	L.O.	Red light, M12 connector, potentiometer adjustment	OGH200
	Diffuse background suppression	100mm 200mm 15-200mm	3-wire DC PNP	L.O. L.O. L.O.	Cube style, red light, M12 connector	OGH280 OGH281 OGH580

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	Polarized retroreflective	4M	3-wire DC PNP	D.O.	Cube style, red light, M12 connector	<u>OGP280</u>
	Polarized retroreflective	4M	3-wire DC PNP	L.O.	Cube style, red light, M12 connector	<u>OGP281</u>
	Thru-beam transmitter	60m	3-wire DC PNP	L.O. / D.O.	Visible laser light, M12 connector, pushbutton adjustment, Class 1	<u>OGS700</u>
	Thru-beam transmitter	2m	3-wire DC PNP	L.O. / D.O.	Visible laser light, M12 connector, pushbutton adjustment, Class 1	<u>OGS701</u>
	Thru-beam receiver	60m	3-wire DC PNP	D.O.	Visible laser light, M12 connector, pushbutton adjustment, Class 1	<u>OGE700</u>
	Thru-beam receiver	2m	3-wire DC PNP	L.O. / D.O.	Visible laser light, M12 connector, pushbutton adjustment, Class 1	<u>OGE701</u>
	Polarized retroreflective	15m	3-wire DC PNP	L.O. / D.O.	Visible laser light, M12 connector, pushbutton adjustment, Class 1	<u>OGP700</u>
	Polarized retroreflective	2m	3-wire DC PNP	L.O. / D.O.	Visible laser light, M12 connector, pushbutton adjustment, Class 1	<u>OGP701</u>
	Diffuse background suppression	200mm	3-wire DC PNP	L.O. / D.O.	Red light, M12 connector, pushbutton adjustment, Class 1	<u>OGH700</u>

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2b. Rectangular Plastic Housing – O6 and O5 Family **IO LINK**

	Function	Sensing Range	Wiring	Output	Miscellaneous	Article Number
	Thru-beam transmitter	10m	2-wire DC	N/A	Visible Red light, M12 connector	O6S301
	Thru-beam receiver	10m	DC PNP	L.O./ D.O. Programmable	Visible Red light, M12 connector, pushbutton adjustment, programmable via switch	O6E301
	Polarized retroreflective	5m	DC PNP			O6P301
	Background suppressed	200mm	DC PNP			O6H301
	Diffuse reflective	500mm	DC PNP			O6T301
	Thru-beam transmitter	20m	2-wire DC	N/A	Visible Red light, M12 connector, no adjustment	O5S200
	Thru-beam receiver	20m	3-wire DC PNP	L.O.	Visible Red light, M12 connector, no adjustment	O5E200
	Polarized retroreflective	7m	3-wire DC PNP	D.O.	Visible Red light, M12 connector, no adjustment	O5P200
	Polarized retroreflective	7m	3-wire DC PNP	L.O.	Visible Red light, M12 connector, no adjustment	O5P201
	Diffuse background suppression	1.8m	3-wire DC PNP	L.O./ D.O. Programmable	Visible Red light, M12 connector, pushbutton adjustment	O5H500
	Diffuse background suppression	1.4m	3-wire DC PNP	L.O.	Red light, M12 connector, potentiometer adjustment	O5H200
	Thru-beam receiver	25m	3-wire DC PNP	L.O./ D.O. Programmable	Red light, M12 connector, pushbutton adjustment	O5E500
	Polarized retroreflective	1.5m	4-wire DC PNP/NPN	L.O./ D.O. Programmable	Red light, M12 connector, pushbutton adjustment	O5G500
	Polarized retroreflective	10m	3-wire DC PNP	L.O./ D.O. Programmable	Red light, M12 connector, pushbutton adjustment	O5P500
	Thru-beam transmitter	25m	2-wire DC	N/A	Red light, M12 connector	O5S500
	Diffuse Measuring Class 2 Laser cm display	2m	4-wire DC PNP	L.O. & D.O. IO Link	Red light, M12 connector, pushbutton adjustment	O5D100
	Diffuse Measuring Class 2 Laser Inch display	2m	4-wire DC PNP	L.O. & D.O. IO Link	Red light, M12 connector, pushbutton adjustment	O5D101


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	Diffuse Measuring Class 1 Laser cm display	2m	4-wire DC PNP	L.O. & D.O. IO Link	Red light, M12 connector, potentiometer adjustment	O5D150
	Diffuse Measuring Class 1 Laser inch display	2m	4-wire DC PNP	L.O. & D.O. IO Link	Red light, M12 connector, potentiometer adjustment	O5D151

2c. M18 Threaded Stainless Steel Housing, Integrated Right Angle Lens – OG90 Family


	Function	Sensing Range	Wiring	Output	Miscellaneous	Article Number
	Thru-beam transmitter	9m	2-wire DC	N/A	Red light, M12 connector, no adjustment	OG5129
	Thru-beam receiver	9m	3-wire DC PNP	L.O.	Red light, M12 connector, no adjustment	OG5127
	Thru-beam receiver	9m	3-wire DC PNP	D.O.	Red light, M12 connector, no adjustment	OG5128
	Polarized retroreflective	3m	3-wire DC PNP	L.O.	Red light, M12 connector, no adjustment	OG5125
	Polarized retroreflective	3m	3-wire DC PNP	D.O.	Red light, M12 connector, no adjustment	OG5126
	Diffuse background suppression	100mm	3-wire DC PNP	L.O.	Red light, M12 connector, fixed range	OG5123
	Diffuse background suppression	200mm	3-wire DC PNP	L.O.	Red light, M12 connector, fixed range	OG5124

2d. M30 Mount with metal housing – OI Family



	Function	Sensing Range	Wiring	Output	Miscellaneous	Article Number
	Polarized retroreflective	15m	3-wire DC PNP	D.O.	Red light, M12 connector, no adjustment	OIP280
	Polarized retroreflective	15m	3-wire DC PNP	L.O.	Red light, M12 connector, no adjustment	OIP281
	Diffuse background suppression	800mm	3-wire DC PNP	L.O.	Red light, M12 connector, fixed range	OIH580

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2e. Laser Distance Sensor – O1D



	Description	Article Number
	Rectangular die cast housing, Class 2 laser light source, 10m sensing distance, 4-wire DC PNP, 2 programmable outputs (2 switching or 1 switching and 1 4-20mA analog, M12 connector	O1D100
	Rectangular die cast housing, Class 2 laser light source, 0.2 to 10m sensing distance, 4 digit numeric display, 3-wire DC PNP, single switching output (programmable to normally open or normally closed), M12 connector. For long range backgrounds.	O1D101
	Rectangular die cast housing, Class 1 laser light source, 6m sensing distance, 4-wire DC PNP, 2 programmable outputs (2 switching or 1 switching and 1 4-20mA analog, M12 connector	O1D155

2f. Miniature Rectangular Plastic Housing, Laser – OJ Family





	Function	Sensing Range	Wiring	Output	Miscellaneous	Article Number
	Diffuse background suppression	200mm	3-wire DC PNP	L.O. / D.O.	Front sensing, red laser light, M8 connector, pushbutton adjustment	OJ5152
	Diffuse background suppression	200mm	3-wire DC PNP	L.O. / D.O.	Side sensing, red laser light, M8 connector, pushbutton adjustment	OJ5154
	Diffuse background suppression	150mm	3-wire DC PNP	L.O. / D.O.	Side sensing, red laser light, M8 connector, pushbutton adjustment	OJ5158

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2g. M30 Threaded Stainless Steel Housing Lasers– OI Family IO LINK

	Function	Sensing Range	Wiring	Output	Miscellaneous	Article Number
	Diffuse Distance Sensor, Class 2 Laser	2m	4-wire DC PNP	LO & DO	Visible laser light, M12 connector, manual adjustment	OID200
	Diffuse Distance Sensor, Class 1 Laser	2m	4-wire DC PNP	LO & DO	Visible laser light, M12 connector, manual adjustment	OID250
	Diffuse Distance Sensor, Class 2 Laser	2m	4-wire DC PNP	LO / DO IO Link	Visible laser light, M12 connector,	OID204
	Diffuse Distance Sensor, Class 1 Laser	2m	4-wire DC PNP	LO & DO IO Link	Visible laser light, M12 connector.	OID254


2h. Multi-Channel Fiber Optic Controller – OO Family

	Channels	Fiber Type	Wiring	Output	Miscellaneous	Article Number
	2	Diffuse / Thru-beam, plastic	DC PNP	L.O. / D.O.	Red light, 8-pin M12 connector, programmable	OO5000
	4	Diffuse / Thru-beam, plastic	DC PNP	L.O. / D.O.	Red light, 8-pin M12 connector, programmable	OO5001
	6	Diffuse / Thru-beam, plastic	DC PNP	L.O. / D.O.	Red light, 14-pin M16 connector, programmable	OO5002
	8	Diffuse / Thru-beam, plastic	DC PNP	L.O. / D.O.	Red light, 14-pin M16 connector, programmable	OO5003

2i. Fiber Optic Amplifier – OB Family


	Fiber Type	Wiring	Output	Miscellaneous	Article Number
	Diffuse / Thru-beam, plastic	DC PNP	L.O. / D.O.	Red light, M12 connector	OBF500
	Diffuse / Thru-beam, glass	DC PNP	L.O. / D.O.	Red light, M12 connector	OBF504

2j. Optical Fork Sensors – OPU Family

	Slot Width	Output	Wiring	Miscellaneous	Article Number
	20mm	DC PNP	L.O. / D.O.	Red light, M8 connector	OPU201
	30mm	DC PNP	L.O. / D.O.	Red light, M8 connector	OPU202
	50mm	DC PNP	L.O. / D.O.	Red light, M8 connector	OPU203
	80mm	DC PNP	L.O. / D.O.	Red light, M8 connector	OPU204
	120mm	DC PNP	L.O. / D.O.	Red light, M8 connector	OPU205

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2k. Optical Angle Sensors – OPL Family

	Angle Width	Output	Wiring	Miscellaneous	Article Number
	60mm	DC PNP	L.O. / D.O.	Red light, M8 connector	OPL200
	100mm	DC PNP	L.O. / D.O.	Red light, M8 connector	OPL201

3. Pressure Sensors


3a. Dual Switching Output **IO LINK**

DC, G1/4 BSPP Process Fitting, M12 Connector – PN7 New Family with 2 color display and rotatable housing

 IO-Link	Output *	Setpoint Range	Process	Overpressure / Burst Limits	Article Number
	PNP or NPN NO or NC	0.1...14.5 psi	Female	145 / 450 psi	PN7097
		0.4...36.2 psi	Female	290 / 725 psi	PN7096
		-13.5...145 psi	Female	1087 / 2175 psi	PN7094
		4...362 psi	Female	2175 / 5075 psi	PN7093
		10...1450 psi	Female	4350 / 9400 psi	PN7092
		40...3620 psi	Female	7250 / 15,950 psi	PN7071
		40...5800 psi	Female	11,580 / 24,650 psi	PN7070
		40...8700 psi	Female	11,580 / 36,250 psi	PN7160
	PNP or NPN NO or NC	-14.3...14.5 psi	Female	290 / 725 psi	PN7099
		0.1...14.5 psi	Male	145 / 450 psi	PN7597
		0.4...36.2 psi	Male	290 / 725 psi	PN7596
		-13.5...145 psi	Male	1087 / 2175 psi	PN7594
		4...362 psi	Male	2175 / 5075 psi	PN7593
		10...1450 psi	Male	4350 / 9400 psi	PN7592
		40...3620 psi	Male	7250 / 15,950 psi	PN7571
		40...5800 psi	Male	11,580 / 24,650 psi	PN7570
40...8700 psi	Male	11,580 / 36,250 psi	PN7560		
		-14.3...14.5 psi	Male	290 / 725 psi	PN7599


PN7 Factory default is PNP, use as PNP device only.

3b. Analog Output, DC, G1/4 BSPP Process Fitting, M12 Connector – PA Family

	Fixed Analog Output	Analog Start Point	Analog End Point	Overpressure / Burst Limits	Article Number
	4 – 20 mA	0 psi	145 psi	1087 / 2175 psi	PA3024
	4 – 20 mA	0 psi	363 psi	2175 / 5075 psi	PA3023
	4 – 20 mA	0 psi	1450 psi	4350 / 9425 psi	PA3022
	4 – 20 Ma	0 psi	3625 psi	5800 / 12325 psi	PA3021


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3c. PNI Differential Pressure Family
 Dual Switching Outputs, DC, G1/4 BSPF Process Fitting, M12, 8 pin Connector

	Output	Differential Setting Range	In Steps of	Overpressure / Burst Limits	Article Number
	Dual PNP/NPN N.O./N.C.	-36.4...145 psi	0.2 psi	725 / 2175 psi	PNI024
	Dual PNP/NPN N.O./N.C.	-91...363 psi	1 psi	1450 / 8075 psi	PNI023
	Dual PNP/NPN N.O./N.C.	-357...1450 psi	1 psi	4350 / 9425 psi	PNI022




T-splitter (8-pin to two 4-pin M12 connectors), [E11566](#)

3d. Part Seated Switch
 Dual Switching Outputs, DC, G1/8 BSPF Process Fitting, M12 4 pin Connector

	Output	Supply Pressure	Article Number
	Dual PNP or NPN N.O. or N.C.	10...21 psi	PS7570

[PS7570](#) Factory default is PNP, use as PNP device only




3e. Dual Switching or Analog Output **IO LINK**
 DC, G1/4 BSPF Process Fitting, M12 Connector – PN2 New Family with 2 color display and rotatable housing.

	Output *	Setpoint Range	Process	Overpressure / Burst Limits	Article Number
	PNP or NPN 1 - switching 2 – switching or analog	40...5800 psi	Female	11,580 / 24,650 psi	PN2070
		40...3620 psi	Female	7250 / 15,950 psi	PN2071
		10...1450 psi	Female	4350 / 9400 psi	PN2092
		4...362 psi	Female	2175 / 5075 psi	PN2093
		-13.5...145 psi	Female	1087 / 2175 psi	PN2094
		-1.8...36.25 psi	Female	290 / 725 psi	PN2096
		-0.72...14.50 psi	Female	145 / 435 psi	PN2097
		-5...100.4 inH2O	Female	145 / 435 psi	PN2098
	PNP or NPN 1 - switching 2 – switching or analog	-14.3...14.5 psi	Female	290 / 725 psi	PN2099
		40...5800 psi	Male	11,580 / 24,650 psi	PN2570
		40...3620 psi	Male	7250 / 15,950 psi	PN2571
		10...1450 psi	Male	4350 / 9400 psi	PN2592
		4...362 psi	Male	2175 / 5075 psi	PN2593
		-13.5...145 psi	Male	1087 / 2175 psi	PN2594
		-1.8...36.25 psi	Male	290 / 725 psi	PN2596
		-0.72...14.50 psi	Male	145 / 435 psi	PN2597
-5...100.4 inH2O	Male	145 / 435 psi	PN2598		
-14.3...14.5 psi	Male	290 / 725 psi	PN2599		

[PN2](#) Factory default is PNP, use as PNP device only.

4. Flow Sensors & Meters

4a. Calorimetric Flow switches and Meters, Single or Dual Switching Outputs, DC, M12 Connector **IO LINK**

	Output	Operating Range cm/s	Miscellaneous	Article Number
	Single PNP, N.O./N.C.	3...300	Easy switch point adjustment. Can be used on gases 200...3000 cm/sec.	SI0508*
	Single PNP, N.O./N.C.	3...300	Pushbutton adjustment. Can be used on gases 200...3000 cm/sec	SI5000*
	Single PNP, N.O./N.C.	3...300	Pushbutton adjustment. Can be used on gases 200...3000 cm/sec. IO LINK	SI5010*
	Dual PNP, N.O./N.C.	3...300	Pushbutton adjustment. Can be used on gases 200...3000 cm/sec. IO LINK	SI5002*
	OUT 1: N.O / N.C. or IO-Link OUT2: N.O / N.C. or analog (4...20 mA scaleable)	5...300 liquids 200...10000 compressed air and gases	Probe length 45mm. OUT 2 can be programmed for temperature. Pipe Diameter 15mm- 400mm	SA5000
			Probe length 100mm. OUT 2 can be programmed for temperature. Pipe Diameter 15mm- 400mm	SA4100
			Probe length 200mm. OUT 2 can be programmed for temperature. Pipe Diameter 15mm- 400mm	SA4300

Use only with ifm BSPP fittings or adapters. Use part number link to the online datasheet and click on the accessories tab to find the options available.

4b. Flow Meters with numerical display. **IO LINK**
 Dual Switching Outputs, PNP/NPN (use PNP only), analog or pulse output, M12 Connector

	Operating Range	Output 1	Output 2	Connection & Note	Article Number
	0...25 lpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G1/2	SM6000
	0...6.6 gpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G1/2	SM6001
	0...6.6 gpm 0...25 lpm	Analog Temp	Analog flow	G1/2	SM6004
	0...50 lpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G3/4	SM7000
	0...13.2 gpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G3/4	SM7001
	0...13.2 gpm 0...50 lpm	Analog Temp	Analog flow	G3/4	SM7004
	0...100 lpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G1	SM8000
	0...26.4 gpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G1	SM8001
	0...26.4 gpm 0...100 lpm	Analog Temp	Analog flow	G1	SM8004
	5...300 lpm	IO Link , PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G2	SM9000 ¹
	1.3...80 gpm	IO Link , PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G2	SM9001 ¹
	5...300 lpm 1.3...80 gpm	IO Link or Analog Temp	Analog flow	G2	SM9004 ¹
	5...600 lpm	IO Link , PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G2	SM2000 ¹
	1.3...160 gpm	IO Link , PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G2	SM2001 ¹
	5...600 lpm 1.3...160 gpm	IO Link or Analog Temp	Analog flow	G2	SM2004 ¹
	0...20 lpm	IO Link , switching or flow frequency	Flow / Temp switching or Flow / Temp frequency	G ½ >95% H₂O only	SV4200
	0...40 lpm	IO Link , switching or flow frequency	Flow / Temp switching or Flow / Temp frequency	G ½ >95% H₂O only	SV5200
	0...100 lpm	IO Link , switching or flow frequency	Flow / Temp switching or Flow / Temp frequency	G ¾ >95% H₂O only	SV7200
	0...50 lpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G3/4	SU7000
	0...13.2 gpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G3/4	SU7001
	0...100 lpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G1	SU8000
	0...26.4 gpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G1 ¼	SU8001

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	0...220 lpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G1 ¼	SU9000
	0...52.8 gpm	PNP switching or pulse.	PNP switching or 4..20 mA / 0..10 V scalable	G1 ¼	SU9001

SM & SU Factory default is PNP, use as PNP device only. Use only with ifm BSPP fittings or adapters. Use part number link to the online datasheet and click on the accessories tab to find the options available.

¹ Note – IO Link capable.

4c. Air flow Meters with numerical display. **IO LINK**

2 Dual programmable (PNP) outputs, 1 NO/NC or Pulse, 1 NO/NC or analog. M12 Connector.


 IO-Link	Description	Article Number
	38mm – 254mm pipe diameter. Range based on pipe size. See chart on website for flow rates. IO LINK	SD0523
	G ½ Process connection, 10 to 1,250 LPM range, analog 0 to 1,250 LPM, 2 Dual programmable (PNP) outputs, 1 NO/NC or Pulse, 1 NO/NC or analog. M12 Connector. IO LINK	SD6050

5. Level Sensors


Note: All level sensors in this section require accessories depending on the application media.

Use only with ifm BSPP fittings or adapters. Use part number link to the online datasheet and click on the accessories tab to find the options available.


5a. Analog and Switching Outputs, M12 Connector – LK3 Family

	Output	Probe Length	Active Zone	Article Number
	4-20 mA / 0-10V and OP: PNP N.O. / N. C.	10.4 in	7.7 in	LK3122
	4-20 mA / 0-10V and OP: PNP N.O. / N. C.	18.6 in	15.4 in	LK3123
	4-20 mA / 0-10V and OP: PNP N.O. / N. C.	28.7 in	23.0 in	LK3124

5b. Two Switching Outputs, DC, M12 Connector – LK1 Family


	Output	Probe Length	Active Zone	Article Number
	PNP N.O. / N.C. and OP: PNP N.O. / N. C.	10.4 in	7.7 in	LK1022
	PNP N.O. / N.C. and OP: PNP N.O. / N. C.	18.6 in	15.4 in	LK1023
	PNP N.O. / N.C. and OP: PNP N.O. / N. C.	28.7 in	23.0 in	LK1024

5c. Four Switching Outputs, DC, 8-pin M12 Connector – LK8 Family

	Output	Probe Length	Active Zone	Article Number
	3 @ PNP N.O. / N.C. and OP: PNP N.O. / N. C.	10.4 in	7.7 in	LK8122
		18.6 in	15.4 in	LK8123
		28.7 in	23.0 in	LK8124





T-splitter (8-pin to two 4-pin M12 connectors), **E11627**

5d. Four Switching PNP Outputs for Level and Temperature, DC, M12 Connector

	Output	Probe Length	Active Zone	Article Number
	2 x N.O. / N.C. (level) 2 x N.O. / N.C. (temp)	10.4 in	7.7 in	LT8022 LT8023 LT8024
		18.6 in	15.4 in	
		28.7 in	23.0 in	



T-splitter (8-pin to two 4-pin M12 connectors), **E11627**

5e. Guided Wave Radar for Level, DC, M12 Connector. **IO LINK**

	Output	Probe Length	Active Zone	Article Number
	2 x PNP N.O. / N.C	Varies, must be purchased separately	L -2.0in.	LR7000
	4 x PNP N.O. / N.C	Varies, must be purchased separately	L -2.0in	LR8000
	1 x PNP N.O. / N.C & 1 x Analog	Varies, must be purchased separately	L -2.0in	LR3000
	1 x PNP N.O. / N.C & 1 x Analog	Varies, must be purchased separately	L -2.0in	LR2050
	Sensing probe for LR sensors, 10"			E43203
	Sensing probe for LR sensors, 18"			E43204
	Sensing probe for LR sensors, 27"			E43205
	Sensing probe for LR sensors, 39"			E43207
	Sensing probe for LR sensors, 47"			E43208
	Sensing probe for LR sensors, 55"			E43209
Sensing probe for LR sensors, 63"			E43210	



If a coaxial tube E432 is necessary for the application, only use ifm BSPP types. Use the part number link to the online datasheet and click on the accessories tab to find the options available.**

5f. High Frequency Capacitance for point level, DC, M12 Connector, IO Link

 IO-Link	Output	Application Type	Article Number
	1 @ PNP N.O. & 1 @ PNP N.C	Factory programmed for aqueous media with a high dielectric	LMT100*
	1 @ PNP N.O. & 1 @ PNP N.C	Factory programmed for oils / hydraulics / media with a low dielectric	LMT110*

***LMT1x0 must be used with ifm BSPP fittings or adapters. Use part number link to the online datasheet and click on the accessories tab to find the options available.**

5g. High Frequency Capacitance for point level, DC, M12 Connector, IO Link



 IO-Link	Output	Application Type	Connection	Length	Part Number
	2 @ PNP N.O. or N.C programmable	Water, water-based media, oils, oil-based media, powdery media.	1/2 " NPT	38mm	LMC502
			G1/2	38mm	LMT102
			G1/2	153mm	LMT104
			G1/2	253mm	LMT105
			G3/4	28mm	LMT202
			G1	38mm	LMT302

6. Temperature Sensors

Note: All temperature sensors in this section require accessories depending on the application!



Use only with ifm BSPP fittings or adapters. Use part number link to the online datasheet and click on the accessories tab to find the options available.

6a. Self-Contained Temperature Sensor, DC, M12 Connector – TN Family, IO LINK

 IO-Link	Output	Switchpoint Range	Scaleable Analog Start Point	Scaleable Analog End Point	Article Number
	4-20 mA / 0-10V and PNP/NPN N.O. / N.C. IO-Link capable	-100...600 °C	-100...595 °C	-95...600 °C	TN2511
	Dual PNP/NPN N.O. / N.C. IO-Link capable	-100...600 °C	N/A	N/A	TN7511

TN Factory default is PNP, use as PNP device only. Use only with ifm BSPP fittings or adapters. Use part number link to the online datasheet and click on the accessories tab to find the options available.










6b. Temperature Control Monitors, DC, M12 Connector – TR Family, **IO LINK**

	Output*	Switchpoint Range	Scaleable Analog Start Point	Scaleable Analog End Point	Article Number
	4-20 mA / 0-10V and PNP/NPN N.O. / N.C. IO-Link capable	-100...600 °C	-100...595 °C	-95...600 °C	TR2439
	Dual PNP/NPN N.O. / N.C. IO-Link capable	-100...600 °C	N/A	N/A	TR7439

TR Factory default is PNP, use as PNP device only. Use only with ifm BSPF fittings or adapters. Use part number link to the online datasheet and click on the accessories tab to find the options available.

7. Condition Monitoring




7a. Octavis Vibration Monitor

	Description	Article Number
	Vibration sensor, MEMS based sensor for connection to VSE Multiplex unit. M12 connector, stainless steel housing. M8 threaded mount.	VSA001
	Vibration sensor, MEMS based sensor for connection to VSE Multiplex unit. M12 pigtail connector, PUR cable, stainless steel housing. M16 threaded mount.	VSA002
	Vibration sensor, MEMS based sensor for connection to VSE Multiplex unit. 3 meter long PUR cable, stainless steel housing. 18mm diameter, 5.5 mm center hole for mount.	VSA004
	Vibration sensor, MEMS based sensor for connection to VSE Multiplex unit. 10 meter long PUR cable, stainless steel housing. 18mm diameter, 5.5 mm center hole for mount.	VSA005
	Vibration sensor, MEMS based sensor for connection to VSE Multiplex unit. 6M PUR cable, stainless steel housing. M16 threaded mount.	VSA006
	Diagnostics electronics for vibration sensors type VSA / VSP, Operating voltage: 24 V DC ± 20 %, Current consumption: 200 mA, Combicon connection, Combicon, 4 sensor inputs 0...10 mA or IEPE, TCP/IP Ethernet interface, Frequency-selective machine monitoring of up to 4 measuring points, Integrated history memory with real-time clock, Counter function, Housing material: PA	VSE002
	Diagnostic electronics for vibration sensors, 24 VDC, 2x PNP digital alarm outputs or 1x digital alarm output + 1x analogue output, V 8x digital configurable PNP outputs/inputs, 4 sensor inputs 0...10 mA, Ethernet interface.	VSE100
	Connection cable to connect VSE directly to a PC	EC2080



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8. Inspection Sensors



8a. efector dualis contour inspection sensor – O2D Family

	Description	Article Number
	8-pin M12 connector, up to 2 meter range. 5 configurable I/O, TCP/IP or Ethernet IP.	640mm x 480mm
		1320mm x 945mm
		400mm x 300mm
	Plastic diffuser for dualis	E21165
	Glass diffuser for dualis	E21168
	Ethernet D-coded to RJ45 cable for programming O2D, I and V vision products.	E11898


8b. Multi Code Reader, 2D Matrix or Bar Code

	Description	Article Number
	8-pin M12 connector, up to 2m range. 5 configurable I/O, TCP/IP, Ethernet IP or RS-232. Infrared light.	640mm x 480mm
		1320mm x 945mm
		400mm x 300mm
	8-pin M12 connector, up to 2m range. 5 configurable I/O, TCP/IP, Ethernet IP or RS-232. Visible red light.	640mm x 480mm
		1320mm x 945mm
		400mm x 300mm

8c. Pixel Counter sensor

	Description	Article Number
	8-pin M12 connector, up to 200mm range. 5 configurable I/O, TCP/IP or Ethernet IP. White Light.	640mm x 480mm
		1320mm x 945mm
		400mm x 300mm
	8-pin M12 connector, up to 200mm range. 5 configurable I/O, TCP/IP or Ethernet IP. Infrared.	640mm x 480mm
		1320mm x 945mm
		400mm x 300mm


8d. Touch Panel Display


	Description	Article Number
	12.1" color touch panel display. 1 GB RAM. Includes USA Power Cord for 120 VAC.	UOB015


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9. Wiring Solutions

9a. 4 pin Single Ended and Patch Cables for with PUR jacket for coolant applications


	Description	Article Number
	4-wire single ended cable with M12 straight female connector, black PUR jacket, viton o-ring, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	2 meter	EVC001
	5 meter	EVC002
	10 meter	EVC003

	Description	Article Number
	4-wire single ended cable with M12 90 deg female connector, black PUR jacket, viton o-ring, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	2 meter	EVC004
	5 meter	EVC005
	10 meter	EVC006





	Description	Article Number
	4-wire patch cable with straight male to straight female M12 connector, black PUR jacket, viton o-ring, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	.3 meter	EVC010
	.6 meter	EVC011
	1 meter	EVC012
	2 meter	EVC013
	5 meter	EVC014
	10 meter	EVC108

	Description	Article Number
	4-wire patch cable with straight male to 90 degree female M12 connector, black PUR jacket, viton o-ring, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	.3 meter	EVC015
	.6 meter	EVC016
	1 meter	EVC017
	2 meter	EVC018
	5 meter	EVC019
	10 meter	EVC109


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	Description	Article Number
	4-wire patch cable with straight male to 90 degree female M12 connector, black PUR jacket, viton o-ring, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	.3 meter	EVC030
	.6 meter	EVC031
	1 meter	EVC032
	2 meter	EVC033
	5 meter	EVC034

9b. 8-pin M12 and 14-pin M16 Female Cable Assemblies, PUR Jacket


	Description	Length	Article Number
	8-pin M12 right angle female	2m	E11231
	8-pin M12 right angle female	5m	E11232
	14-pin M16 right angle female	2m	E11645
	14-pin M16 right angle female	5m	E11697


9c. 4 pin Single Ended and Patch Cables for with PVC jacket for washer applications

	Description	Article Number
	4-wire single ended cable with M12 straight female connector, orange PVC jacket, EPDM o-ring compressed to permanently maintain sealing, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	5 meter	EVT001
	10 meter	EVT002
	25 meter	EVT003


	Description	Article Number
	4-wire single ended cable with M12 90 degree female connector, orange PVC jacket, EPDM o-ring compressed to permanently maintain sealing, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	5 meter	EVT004
	10 meter	EVT005
	25 meter	EVT006

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	Description	Article Number
	4-wire patch cable with straight male to straight female M12 connector, orange PVC jacket EPDM o-ring compressed to permanently maintain sealing, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	.3 meter	EVT040
	.6 meter	EVT041
	1 meter	EVT042
	2 meter	EVT043
	5 meter	EVT044
	10 meter	EVT045

	Description	Article Number
	4-wire patch cable with straight male to 90 degree female M12 connector, orange PVC jacket EPDM o-ring compressed to permanently maintain sealing, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	.3 meter	EVT046
	.6 meter	EVT047
	1 meter	EVT048
	2 meter	EVT049
	5 meter	EVT050
	10 meter	EVT051

9d. 4 pin Single Ended and Patch Cables for with PVC jacket for washer applications

	Description	Article Number
	4-wire single ended cable with M12 straight female connector, orange PVC jacket, EPDM o-ring compressed to permanently maintain sealing, 22 gauge, 250 VAC / 300 VDC, IP67, 68 & 69K. Not rated for use in cable tray applications	
	5 meter	EVT001
	10 meter	EVT002
	25 meter	EVT003

9e. Field Attachable Connectors & Tee splitters

	Description	Article Number
	Field Attachable connectors, 4 Conductor Black, Brown, White & Blue core colors	E18163
	Field Attachable connectors, 3 Conductor Black, Green & Red core colors	E18164
	Tee splitter, Pins 2 connected to 4 connector female connectors.	EBC114
	Tee splitter, Pins 2 not connected female connectors	EBC115

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10. Mounting Accessories –






10a. Inductive and Photoelectric Sensors

	Description	Size / Sensor Family	Article Number
	Snap clamp, plastic	M8 / IE	E11521
	Mounting clamp, plastic	M8 / IE	E10221
	L-bracket, stainless steel	M8 / IE	U20304
	Snap clamp, plastic	M12 / IF	E11047
	Quick-mount sleeve with hex nut, nickel-plated brass, short, M16 x 1 thread	M12 / IF	E11114
	Quick-mount sleeve with hex nut, nickel-plated brass, short, M16 x 1 thread	M12 / IF	E10806
	Quick-mount sleeve with hex nut, nickel-plated brass, long, M16 x 1 thread	M12 / IF	E10741
	L-bracket, stainless steel	M12 / IF	E20301
	Snap clamp, plastic	M18 / IG / OG	E11048
	Quick-mount sleeve with hex nut, nickel-plated brass, short, M22 x 1. thread	M18 / IG / OG	E11115
	Quick-mount sleeve with hex nut, nickel-plated brass, short, M24 x 1.5 thread	M18 / IG	E10807
	Quick-mount sleeve with hex nut, nickel-plated brass, long, M24 x 1.5 thread	M18 / IG	E10742
	L-bracket, stainless steel	M18 / IG / OG	E20302
	Short swivel bracket	M18 / IG / OG	E20718
	Tall swivel bracket	M18 / IG / OG	E20719
No picture available	Angle bracket for OG sensor, stainless steel	OG	U20838
No picture available	Angle bracket for reflectors, stainless steel	OG	U20839

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	Short swivel bracket, rail mount	M18 / IG / OG	E20867
	Tall swivel bracket, rail mount	M18 / IG / OG	E20866
	Protective swivel bracket	M18 / IG / OG	U60017
	Snap clamp, plastic	M30 / II / KI	E11049
	Quick-mount sleeve with hex nut, nickel-plated brass, short, M36 x 1.5 thread	M30 / II / KI	E10808
	Quick-mount sleeve with hex nut, nickel-plated brass, long, M36 x 1.5 thread	M30 / II / KI	E10743
	L-bracket, stainless steel	M30 / II / KI	E20303
	Short swivel bracket	M30 / II / KI	E20873
	Tall swivel bracket	M30 / II / KI	E20874
	Rail mount tall swivel bracket	M30 / II / KI	E20875
	Rail mount swivel bracket	O1D	E21079
	Swivel mounting bracket	O5	E21083
	Freestanding mounting bracket	O5	E21087
	Mounting inserts, stainless steel	O5	E21086
	Protective swivel bracket	O5	E21084
	Dovetail mounting clamp	O5	E21088
	Fine adjust swivel bracket, front sensing	OJ	E20975
	Fine adjust swivel bracket, side sensing	OJ	E20976
	Mounting rod straight Ø 10 / M8. 150 mm long.	O6	E21081

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	Clamp mounting set O6.Type. Ø 10 mm rod.	O6	E21272
	Angle bracket O6	O6	E21271
	Protective cover O6	O6	E21273
	Wall mounting bracket for touch PC	UOB015	E2D401
	Mounting set for control cabinet mount.	UOB015	E2D402