Amphenol®

Max-M12 Connector

Amphenol Industrial Products Group introduces our ruggedized M12 high speed data connector, the Max-M12. High speed data transmission connection systems have traditionally been implemented into commercial applications with little regard to high vibration, high temperature and overall harsh environment demands. With the increased implementation of these high speed Datalink connection systems into more heavy duty / harsh environment surroundings, the need for a more robust and ruggedized connection system has surfaced.

Based on the IEC 61076-2-101 and SAE J 2839 standards the Max-M12 connection system makes it the perfect solution for the ultra rugged applications that sometimes exist in markets dealing with Heavy Equipment, Rail & Mass Transit, Process Control, Factory Automation, etc.

Features:

- HDM 12 Versions Available
  - Plastic or Metal (for shielding)
  - 90° right angle and straight connector offerings
  - 3, 4, and 5 way circuit patterns
  - A, B, D & P polarity codes – based on IEC 61076-2-101
- Available as stand-alone connectors & cable assemblies (standard and overmolded)
- Terminals capable of being terminated to:
  - 0.8 mm^2 (18 AWG) or 0.5 mm^2 (20 AWG) conductors as defined by SAE J1128 and 0.75 mm^2 and 0.50 mm^2 conductors as defined by ISO 6722
- 444 N (100 LBF) pull force on cable
- Backward compatible with IEC 61076-2-101 (M12)
- More resistant to terminal damage
- Extreme environmental testing based on J2839 requirements
  - High pressure wash down

Max-M12 Connector

Electrical & Environmental Characteristics:

- SAE J 2839 Compliant
- IP 67 or Above
- Backward compatible with IEC 61076-2-101 (M12)
- Provisions for overall cable shield or drain wire to the connector plug housing
- Connection resistance – maximum millivolt drop of 50 millivolts

SPECIFICATION

Operating Voltage	5 pin - 60V AC/DC 3 & 4 pin - 250V AC/DC	IEC 60664
Current Rating	4A MAX.	IEC 60512 TEST 5B
Tempature Rating	-55°C - +125°C -55°C - +150°C (with Viton Seals)	SAE J2839, 4 . 2 . 3 . 13
Dielectric Withstanding Voltage	1000V	IEC 60512, TEST 4A
Insulation Resistance	>20 Megohms	SAE J2839, 4 . 2 . 3 . 3
Rated Impulse Voltage	1500V	IEC 60664-1
Contact Resistance	<10 mΩ	IEC 60512
Vibration, Sine	10 - 2000 Hz, 20g, <1 us	SAE J2839, 4 . 2 . 3 . 15
Shock, Half Sine	10 CYCLES, 50g, 11ms, <1 us	SAE J2839, 4 . 2 . 3 . 16
Temperature Life	1000H AT 125°C ± 3°C	SAE J2839, 4 . 2 . 3 . 7
Durability	100 CYCLES MIN.	SAE J2839, 4 . 2 . 3 . 11
Salt Fog	240H	SAE J2839, 4 . 2 . 3 . 12
Protection Class	IP67 or Above	IEC 60529
Wire Gauge	0.5 mm_2 (20AWG) or 0.8 mm_2 (18AWG)/ 0.75 mm_2	SAE J1128 / ISO 6722
Cable OD.	ø 12.7 MAX.	
Recommended Torque	M12 THREAD, 0.8 - 1.0 Nm	
Connector Retention	444 N MIN	SAE J2839, 4 . 2 . 3 . 20
Contact Retention	110 N MIN	SAE J2839, 4 . 2 . 3 . 18
Panel Thickness	1 - 6 mm	
Shell Plating	Nickel	

Applications:

- Construction Machinery & Equipment
- Forestry Equipment
- Navigation, GPS and Telematics Applications
- Mining Machinery & Equipment
- Agricultural Machinery & Equipment
- Harsh Environment Sensors, Controllers, Actuators, Switches, etc.

For further information on your individual application requirements, contact: Amphenol Corporation

North America:
Amphenol Industrial Products Group
180 N. Freeport Drive, Plant 4
Nogales, AZ 85621
Tel: (520) 285-5130
Fax: (520) 285-5134
Email: tech@amphenol-aio.com

Europe:
Amphenol Industrial Operations Europe
Via Barbaiana 5
1-20020 Lainate (MI) Italy
Tel: +39 02 93254.204
Fax: +39 02 93254.444
Email: info@amphenol-aio.com

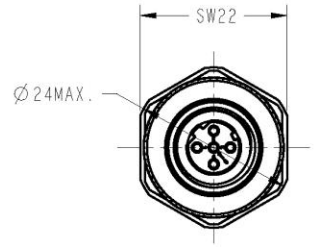
Middle East:
Amphenol Middle East Enterprises FZE
Postal: PO Box 21107, Aiman Free Zone -UAE
Physical Warehouse: #C1-16,Ajman Free Zone, UAE
Phone: +9 716-7422494
Fax: +9 716-7422941
Email: ameefze@eim.ae

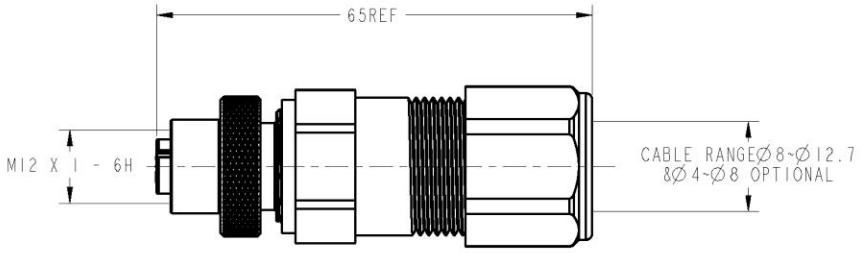
Asia:
Amphenol Technology Shenzhen Ltd
Block 5 Fuan 2nd Industrial Park
Dayang Rd, Fuyong Baoan
Baoan, Shenzhen, China 518103
Tel; +86 755 2881 8389
Fax; +86 755 2991 8310
Email: enquiry@amphenol-aio.com

GENERAL TOLERANCE					
DIM. RANGE	0.5 ~ 3	› 3 ~ 6	› 6 ~ 30	› 30 ~ 120	› 120 ~ 400
TOLERANCE	±0.1	±0.1	±0.2	±0.3	±0.5

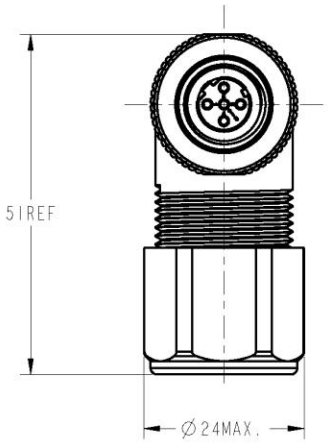
CUSTOMER DRAWING

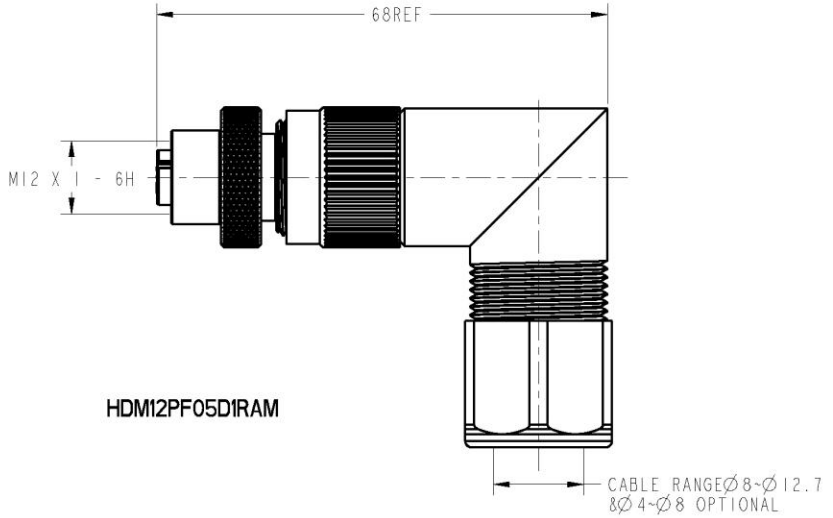
REVISIONS		
LTR	DESCRIPTION	DATE
PA6	UPDATE DRAWING	2014-1-22





HDM12PF05D1STM





HDM12PF05D1RAM

NOTES:

UNLESS OTHERWISE SPECIFIED	SPECIFICATIONS
LINEAR DIMENSIONS ARE IN: **MILLIMETERS** TOLERANCES: ANGLES: ±2° DEFAULT LINEAR TOLERANCES SEE TABLE DIM. & TOL. PER ASME Y14.5M-1994; DRM PER MIL-DTL-31000; OTHER AMPHENOL STANDARDS: 9-9318 LEGENDS: △=FLAG NOTE CALL OUT REFERENCE ONLY	MATERIAL SPEC. N/A PROCESS SPEC. N/A

POS	QTY	PART NUMBER	DESCRIPTION	NOTE

PARTS LIST

APPROVALS		DATE
PREPARED BY	Show Chen	
ENGINEER IN CHARGE	Sam Xu	22-Jan-14
DESIGN MANAGER	Ran Xiao	
DESIGN ACTIVITY GROUP	C3	

THIRD ANGLE PROJECTION

AMPHENOL INDUSTRIAL OPERATIONS
Amphenol Technology(Zhuhai)Co.,Ltd
No.63, Xinghen Road, Senzao Town, Jinwan, Zhuhai, PRC

MAX M12 WITH METAL BACKSHELL
NICKEL PLATING

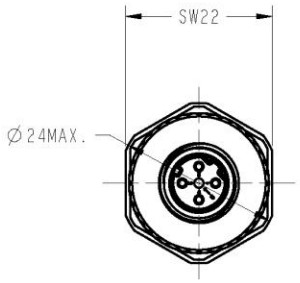
SIZE	CAGE CODE	DOCUMENT NO.	REV.
C	77820	HDM12_M	PA6

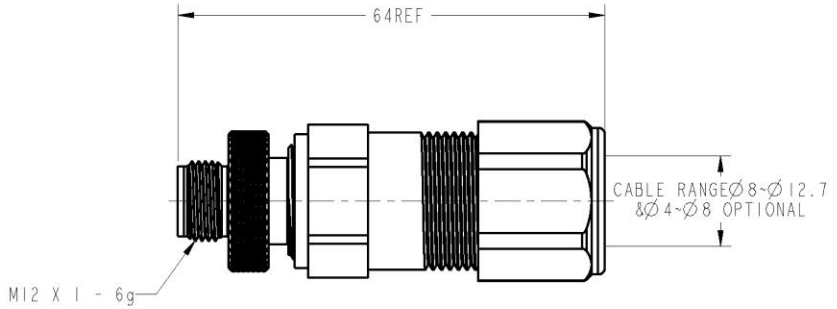
SCALE: 1.0 | SHEET 1 OF 7

N/A	PRO/ENGINEER INFORMATION
NEXT ASSEMBLY	Pro/e Model Used: HDM12PFD1RAM_ASSEM
METRIC DOCUMENT	Drawing Name: HDM12_METAL_BACKSHELL

DOCUMENT NO.	SHEET	REV.
HDM12_M	SHEET 1 OF 7	PA6

FORMAT: C-L-E-Rev.B





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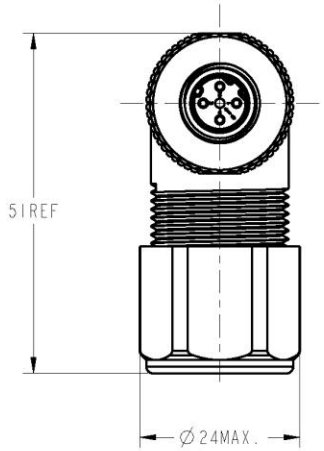

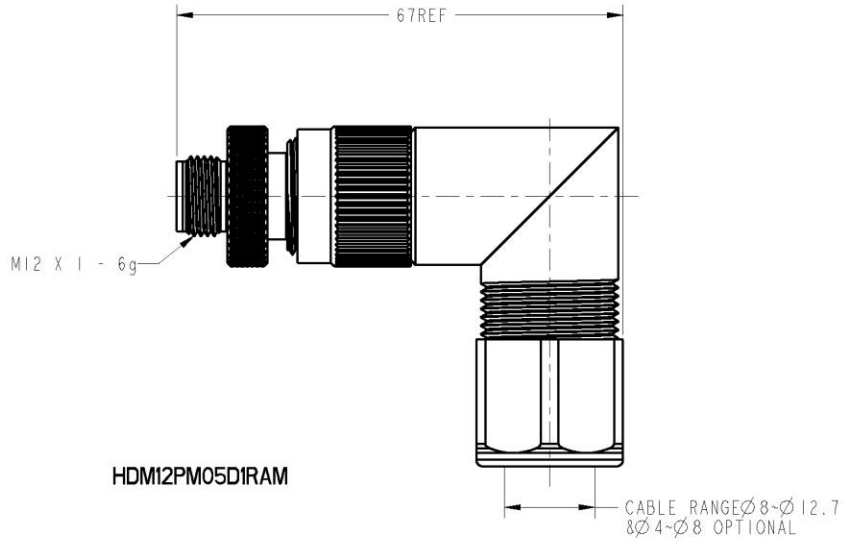

HDM12PM05D1RAM

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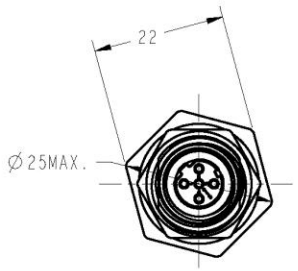

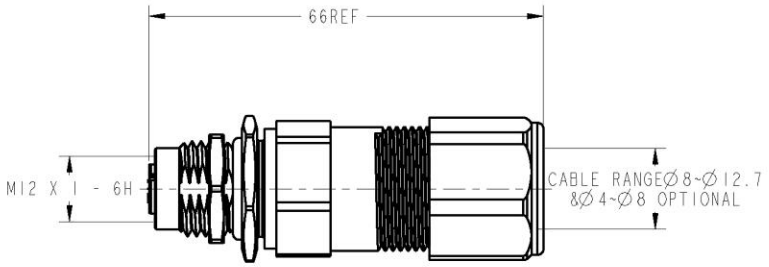

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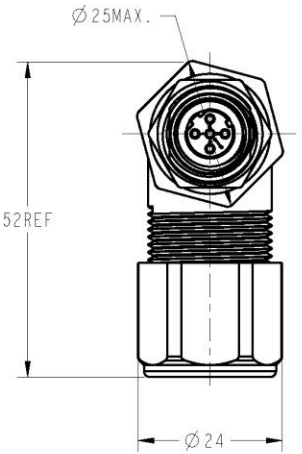

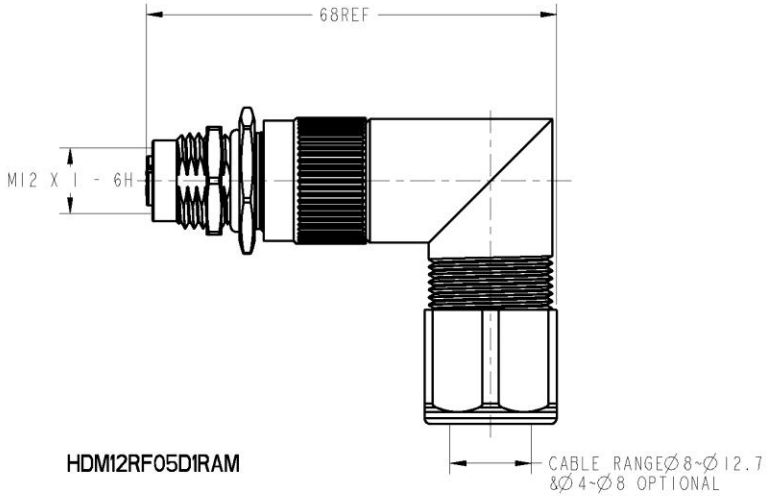

HDM12RF05D1RAM

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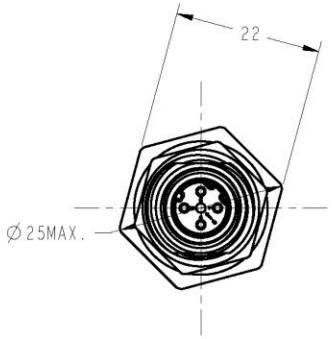

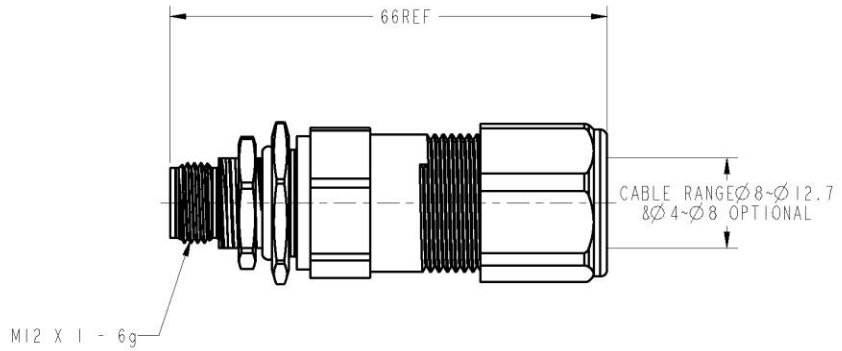

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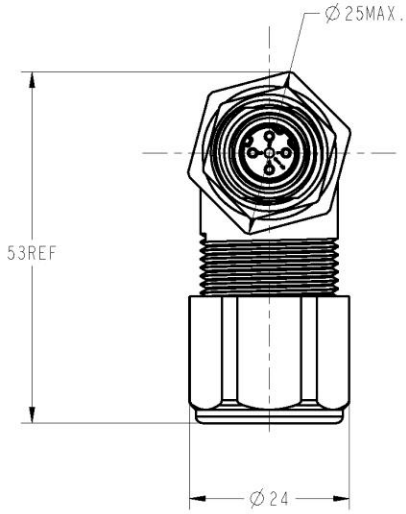

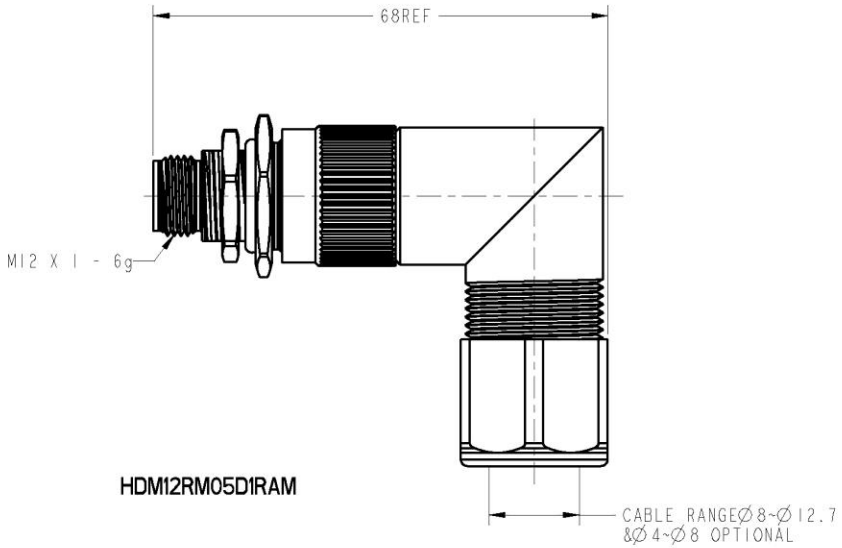

HDM12RM05D1RAM

NOTES:

INSERT ARRANGEMENT AND CODING

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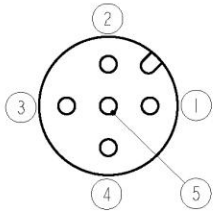
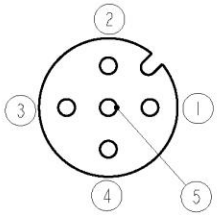
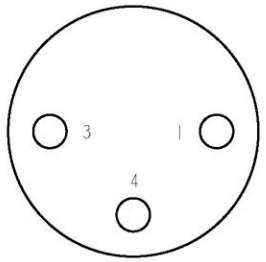
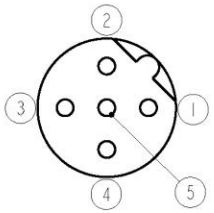
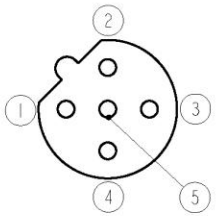
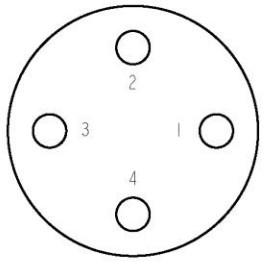
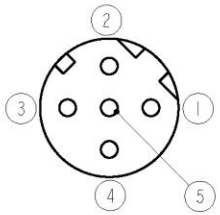
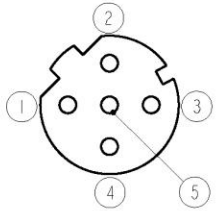
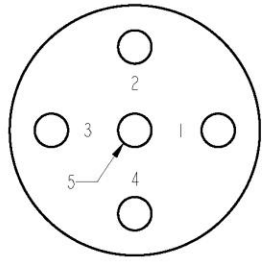
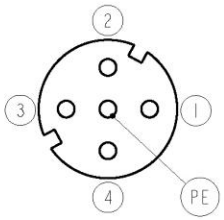
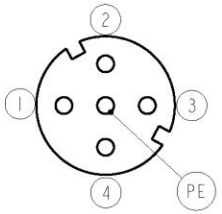
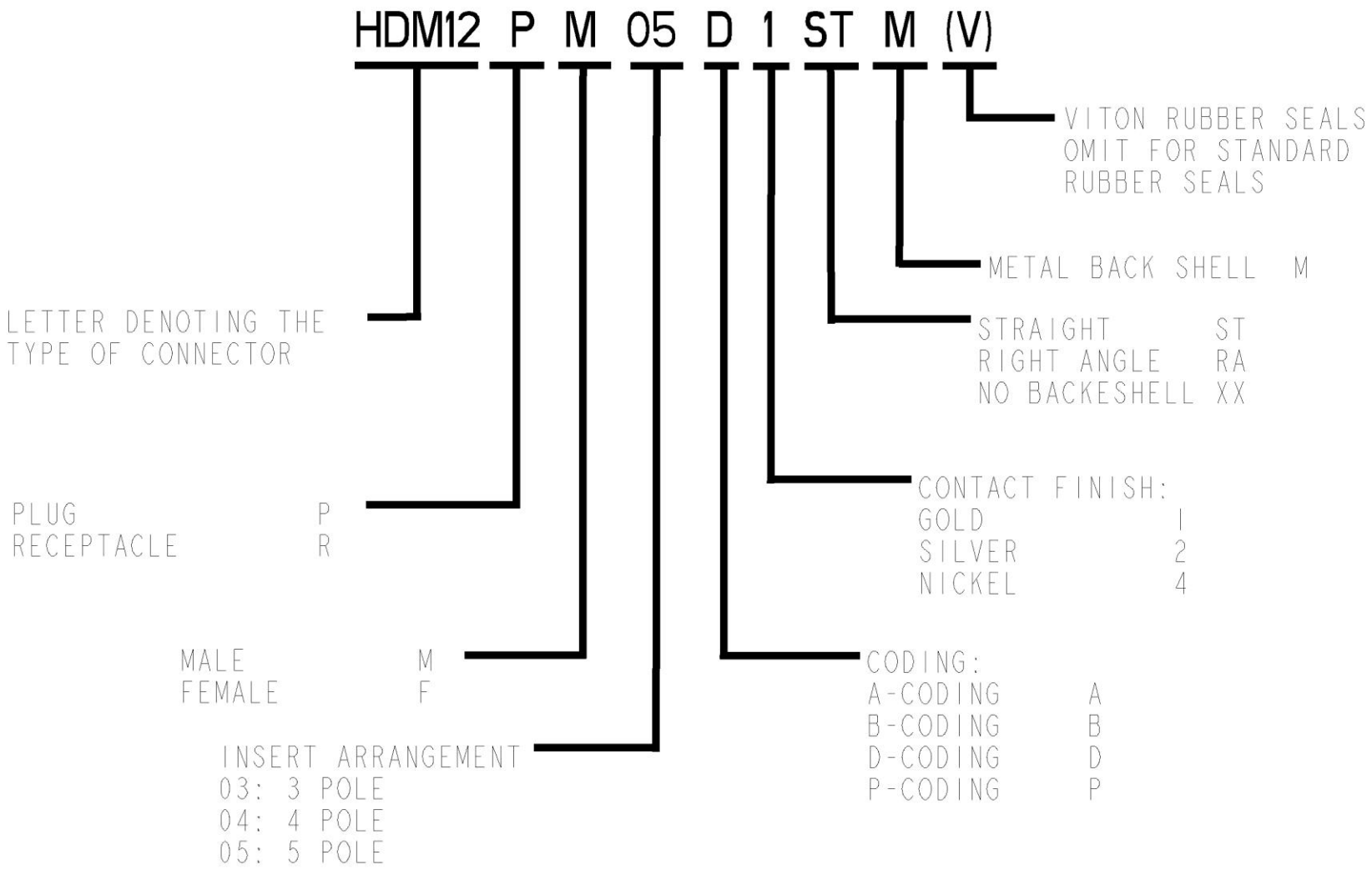
A - CODING (5 POLE)			
B - coding (5 POLE)			
D - coding (5 POLE)			
P - coding (4 + PE POLE)			

NOTES:

SPECIFICATION

OPERATING VOLTAGE	5 PIN -60V AC/DC 3&4 PIN-250V AC/DC	IEC 60664
CURRENT RATING	4A MAX.	IEC 60512 TEST 5B
TEMPERATURE RATING	-55°C - +125°C -55°C - +150°C(WITH VITON SEALS)	SAE J2839,4.2.3.13
DIELECTRIC WITHSTANDING VOLTAGE	1000V	IEC 60512, TEST 4A
INSULATION RESISTANCE	>20 Megohms	SAE J2839, 4.2.3.3
RATED IMPULSE VOLTAGE	1500V	IEC 60664-1
CONTACT RESISTANCE	<10 mΩ	IEC 60512 TEST 2A
CONTACT RESISTANCE	EMI PROTECTION	
VIBRATION, SINE	10 - 2000 Hz, 20g, <1 us	SAE J2839, 4.2.3.15
SHOCK, HALF SINE	10 CYCLES, 50g, 11ms, <1 us	SAE J2839, 4.2.3.16
TEMPERATURE LIFE	1000H AT 125°C ± 3°C	SAE J2839, 4.2.3.7
DURABILITY	100 CYCLES MIN.	SAE J2839, 4.2.3.11
SALT FOG	240H	SAE J2839, 4.2.3.12
PROTECTION CLASS	IP67 OR ABOVE	IEC 60529
WIRE GAUGE	0.5 mm^2 (20AWG) OR 0.8 mm^2 (18AWG) / 0.75 mm^2	SAE J1128 / ISO 6722
CABLE OD.	Ø12.7 MAX.	
RECOMMENDED TORQUE	M12 THREAD, 0.8 - 1.0 Nm	
CONNECTOR RETENTION	444N MIN	SAE J2839,4.2.3.20
CONTACT RETENTION	110 N MIN	SAE J2839,4.2.3.18
PANEL THICKNESS	1-6 mm FOR HDM12RF	
	1-6 mm FOR HDM12RF	
SHELL PLATING	NICKEL PLATED	

NOTES:



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