

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 mm² (18 AWG) or 0.5 mm² (20 AWG) conductors as defined by SAE J1128 and 0.75 mm² and 0.50 mm² 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

www.amphenol-industrial.com



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
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
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.	∅ 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.

Notice: Specifications are subject to change without notice. Contact your nearest Amphenol Corporation Sales Office for the latest specifications. All statements, information and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty, or responsibility of any kind, expressed or implied. Statements of suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should assume that all safety measures are indicated or that other measures may not be required. Specifications are typical and may not apply to all connectors.

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

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Fax: +86 755 2991 8310
Email: enquiry@amphenol-aio.com

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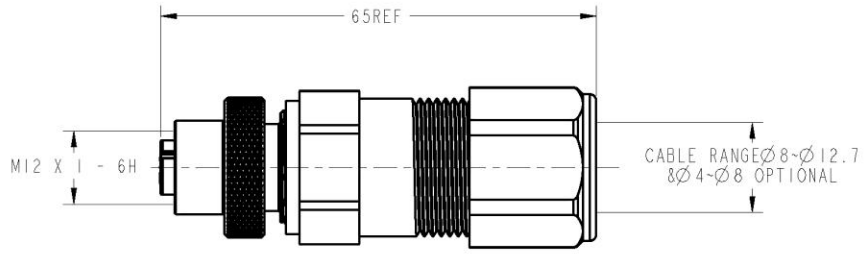
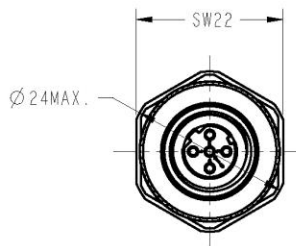
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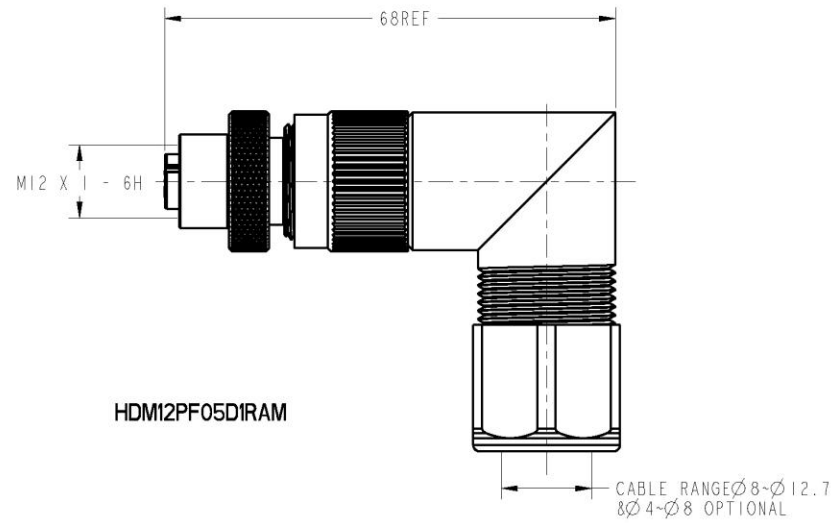
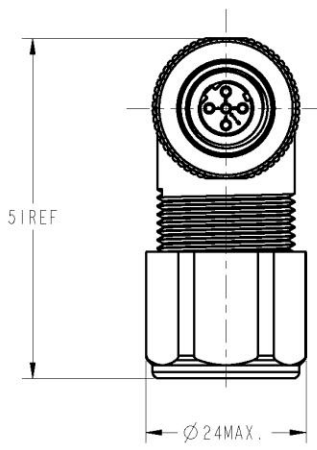
HDM12 M		REV. PA6
SHEET 1 OF 7		
REVISIONS		
LTR	DESCRIPTION	DATE
PA6	UPDATE DRAWING	2014-1-22

CUSTOMER DRAWING

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



HDM12PF05D1STM



HDM12PF05DIRAM

NOTES:
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N/A	PRO/ENGINEER INFORMATION
NEXT ASSEMBLY	Pro/s Model Used:
METRIC DOCUMENT	Drawing Name:
	HDM12-METAL BACKSHELL

UNLESS OTHERWISE SPECIFIED		SPECIFICATIONS		POS	QTY	PART NUMBER	DESCRIPTION	NOTE
LINEAR DIMENSIONS ARE IN: MILLIMETERS		MATERIAL SPEC.		APPROVALS		PARTS LIST		
TOLERANCES: ANGLES= ±2° DEFAULT LINEAR TOLERANCES SEE TABLE		N/A		PREPARED BY	DATE	AMPHENOL INDUSTRIAL OPERATIONS		
DIM. & TOL. PER ASME Y14.5M-1994; DRM PER MIL-DTL-31000; OTHER AMPHENOL STANDARDS: 9-9318		PROCESS SPEC.		DESIGNED BY	22-Jun-14	Amphenol Technology(Zhuhai)Co.Ltd		
LEGENDS: △=FLAG NOTE CALL OUT REFERENCE ONLY		N/A		DESIGNER		No.63, Xinghen Road, Sanzao Town, Jinwan, Zhuhai, PRC		
				DESIGNER MANAGER		MAX M12 WITH METAL BACKSHELL NICKEL PLATING		
				DESIGNER ACTIVITY GROUP	C 3	SIZE	CASE CODE	DOCUMENT NO.
				THIRD ANGLE PROJECTION		C	77820	HDM12 M
						SCALE: 1:0	REF.	SHEET 1 OF 7

HDM12 M SHEET 1 OF 7 PA6

C

B

A

D

C

REV. PA6 SHEET 1 OF 7

HDM12 M

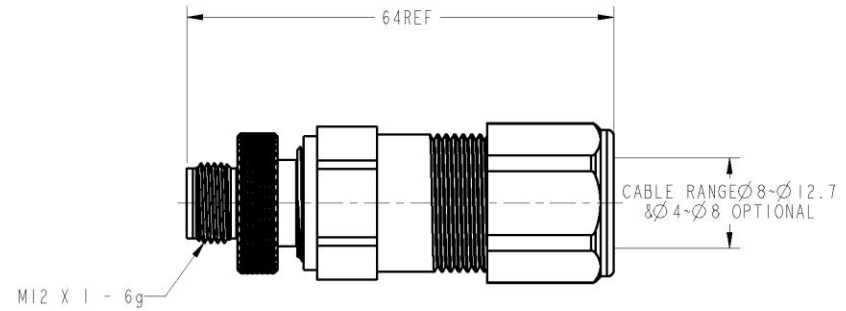
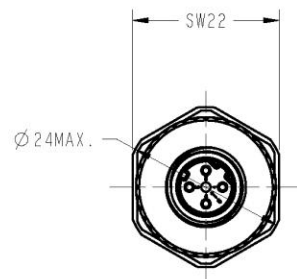
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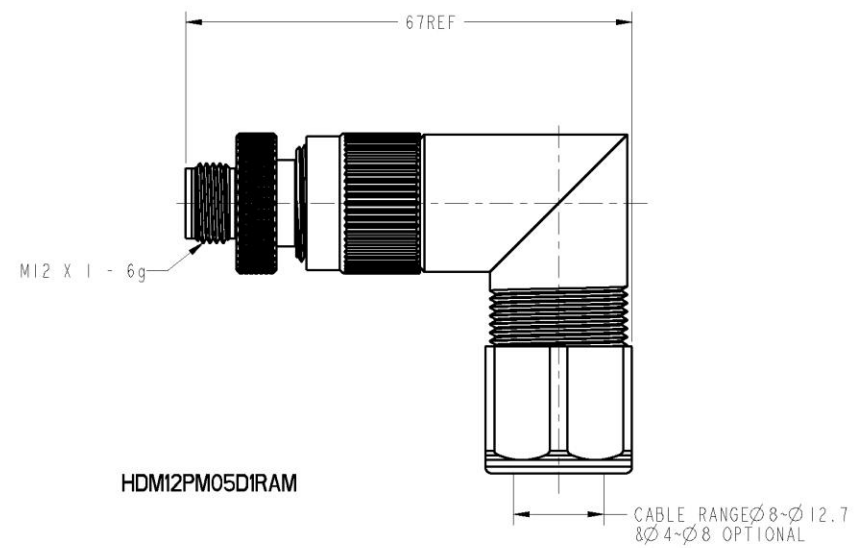
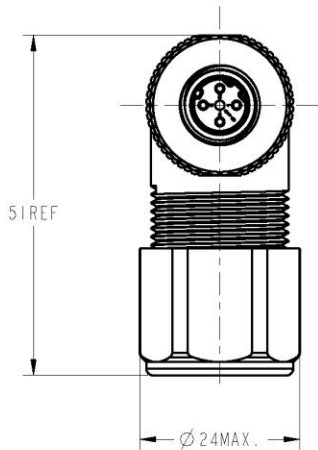
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HDM12PM05D1STM



HDM12PM05D1RAM

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DOCUMENT NO.	SHEET 2 OF 7	REV.
HDM12.M	PA6	

SIZE	CAGE CODE	DOCUMENT NO.	REV.
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SCALE: 2.0	REF:	SHEET 2 OF 7	

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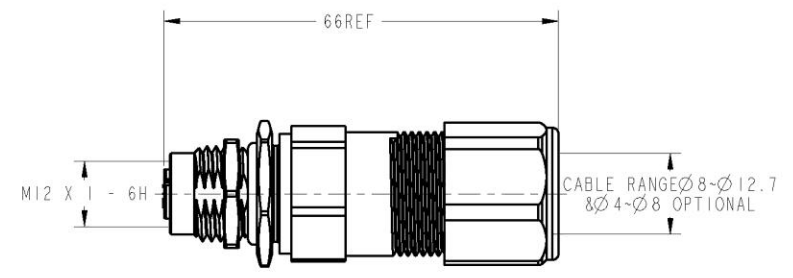
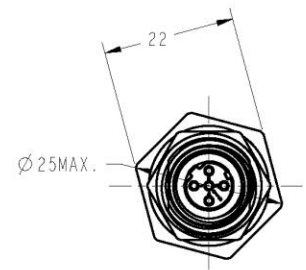
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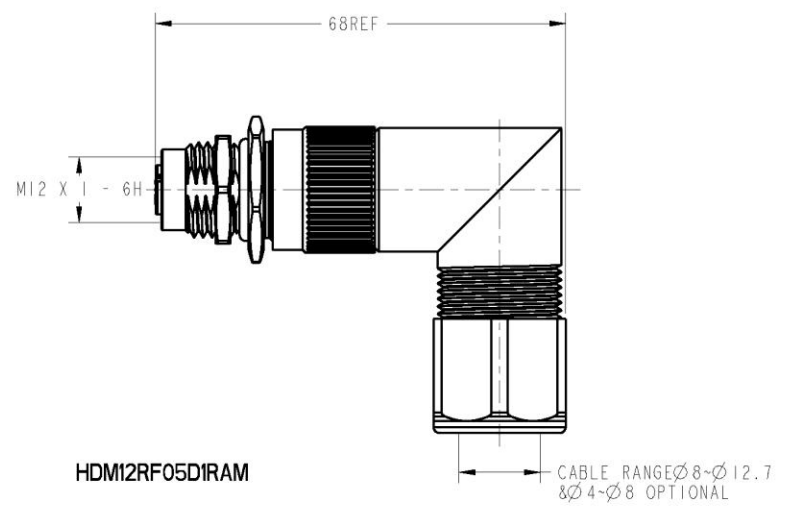
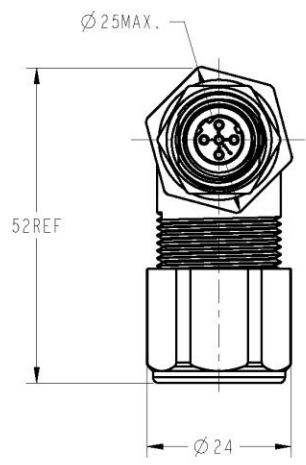
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DOCUMENT NO. HDM12.M SHEET 2 OF 7 PA6

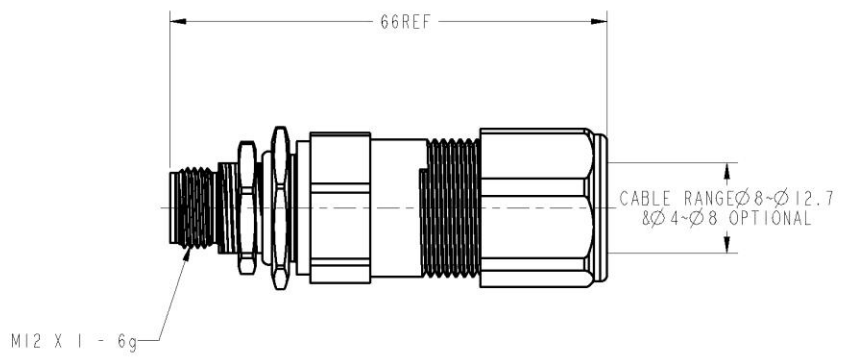
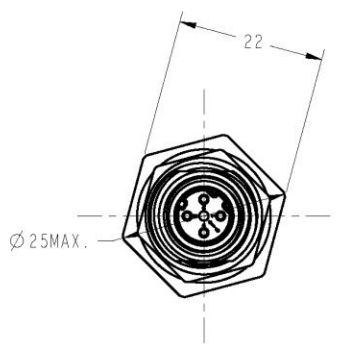


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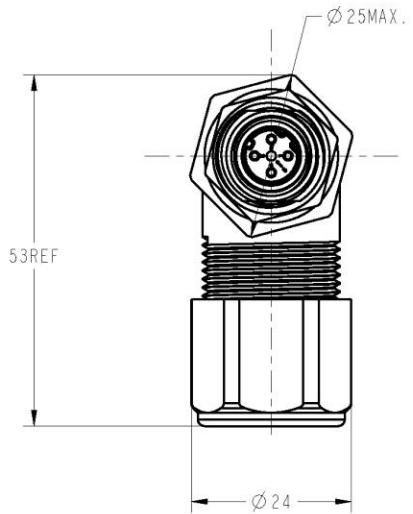


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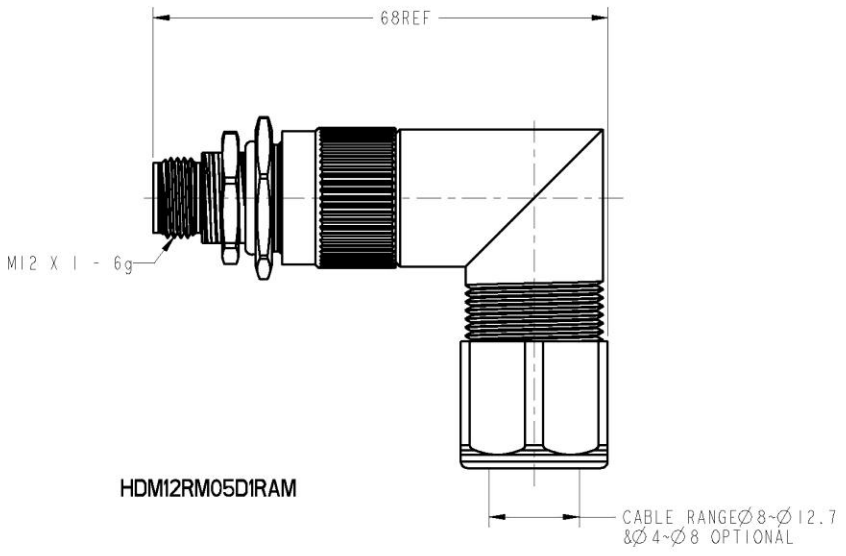
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HDM12RM05D1STM



HDM12RM05D1RAM



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SIZE C	CAGE CODE 77820	DOCUMENT NO. HDM12.M	REV. PA6
SCALE: 2.0		REF:	SHEET 4 OF 7

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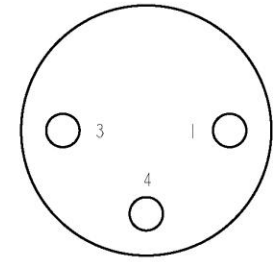
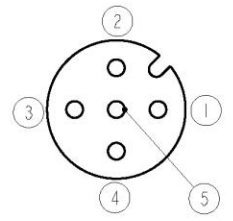
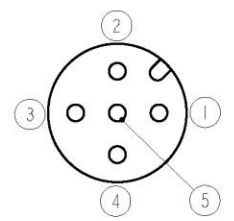
CODING

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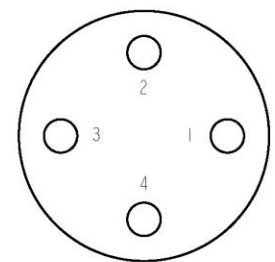
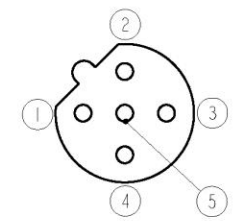
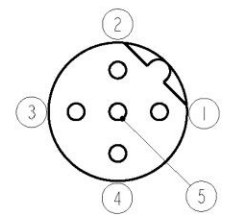
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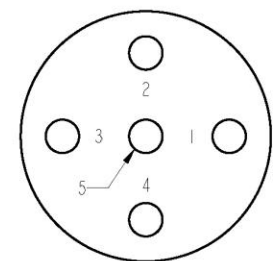
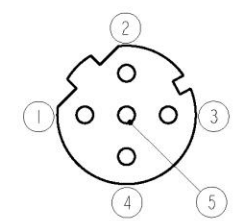
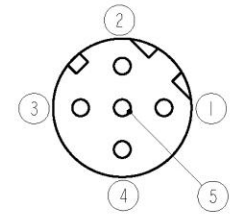
**A - CODING
(5 POLE)**



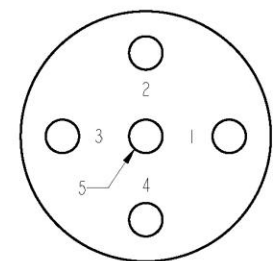
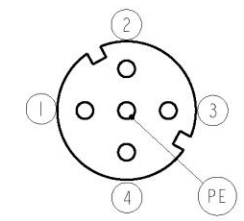
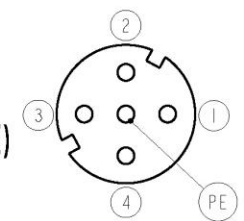
**B - coding
(5 POLE)**



**D - coding
(5 POLE)**



**P - coding
(4 + PE POLE)**



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HDM12.M SHEET 5 OF 7 PA6

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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.	∅12.7 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	

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SIZE C	CASE CODE 77820	DOCUMENT NO. HDM12.M	REV. PA6
SCALE: 1.0	REF:	SHEET 6 OF 7	

HDM12 P M 05 D 1 ST M (V)

LETTER DENOTING THE TYPE OF CONNECTOR

PLUG P
RECEPTACLE R

MALE M
FEMALE F

INSERT ARRANGEMENT
03: 3 POLE
04: 4 POLE
05: 5 POLE

VITON RUBBER SEALS
OMIT FOR STANDARD
RUBBER SEALS

METAL BACK SHELL M

STRAIGHT ST
RIGHT ANGLE RA
NO BACKSHELL XX

CONTACT FINISH:
GOLD 1
SILVER 2
NICKEL 4

CODING:
A-CODING A
B-CODING B
D-CODING D
P-CODING P

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