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**3M™ Industrial M12 Wiremount Male Connector,
Solder Type**

Product Specification 78-5102-0150-8

**Product Series: 3N104-X000-S08 BF
(JNPS-1139)**

Released: 9-10-2012

製品仕様書
Product Specification

3M 印 産業用 M12
ワイヤーマウント オス型 コネクタ

3N1XX-X000-X0X XX

3M™ Industrial M12
Wiremount Male Connector

3N1XX-X000-X0X XX

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SUMITOMO 3M LIMITED

ELECTRO AND COMMUNICATIONS MARKETS
ELECTRONIC SOLUTIONS TECHNICAL DEPARTMENT

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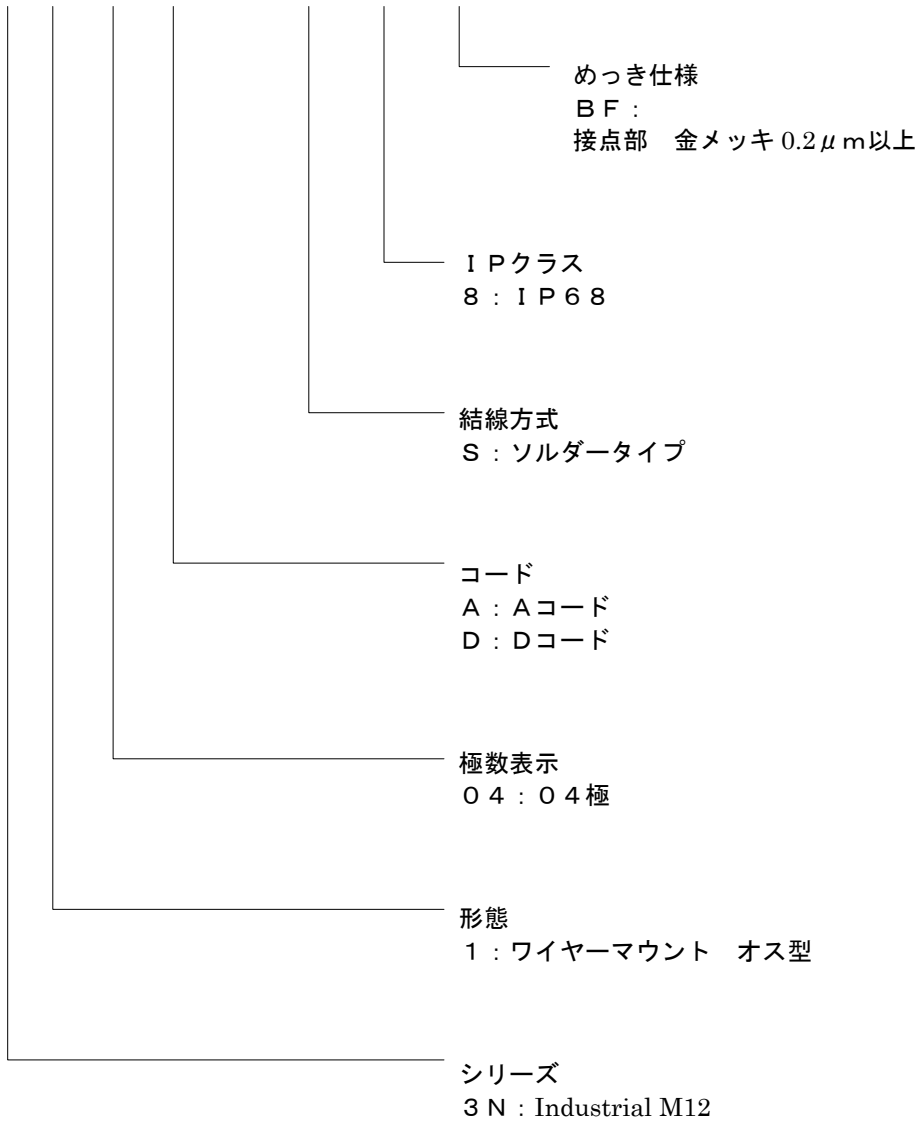
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1 適用範囲

本仕様書は、下記の製品番号体系に記載された製品番号の 3M 印産業用 M12 ワイヤマウント オス型 コネクタに適用する。

製品番号体系

3 N 1 XX-X 000-X 0 X XX



2 機能

当該コネクタは、産業用 M12 ワイヤーマウント オス型 コネクタ であり、対応するメス型 コネクタと嵌合することにより、電気信号を授受する機能を発揮する。

3 適合対象

3.1 適合コネクタ

産業用 M12 ワイヤーマウント メス型 コネクタ

3.2 推奨ケーブル

3.2.1 電線

AWG 20 ~ 24

3.2.2 ケーブル外径

φ4.0 ~ 6.5 mm

4 関連仕様図類

関連仕様図類 JNPD-1139 に記載の製品仕様図を参照

5 関連規格類

IEC 61076-2-101

6 品質特性

6.1 定格

項目	定格
定格電流	4 A MAX.
定格電圧	250 VDC MAX.
使用温湿度	-25°C~85°C

6.2 物理特性

() 内の数値は参考値

項目	規格	試験条件	準拠規格 (参考規格)
極性試験	35N(3.5kgf)以上	弊社適合プラグとの組み合わせによる。	IEC 60512 13e
コンタクト 挿入抜去力	コンタクト挿入力(初期) : 10N(1kgf)/pin 以下 コンタクト抜去力(初期) : 15N(1.5kgf)/pin 以下	弊社適合プラグとの組み合わせによる。 挿抜スピード 25mm/min で測定する。	
防水試験	試験後、水の内部浸入なきこと	1m 浸漬、24 時間	IEC 60529
半田耐熱性	試験後、外観的に著しい変形のなきこと。	手半田 : 380°C、3 秒、2 回まで	

電気的特性

項目	規格	試験条件	準拠規格 (参考規格)
耐電圧	漏れ電流 1 mA 以内で絶縁破壊が発生しないこと。	隣接コネクタ間に AC1000V RMS を 1 分間印加。	
絶縁抵抗	100MΩ 以上	隣接ポスト間に DC500V 印加し、1 分後、測定する。	
瞬断	試験中に 1 μs 以上の瞬断が発生しないこと。	振動試験	
接触抵抗	初期接触抵抗 10mΩ 以下	抵抗測定電流 1A, 電圧 5V にて測定する。 (弊社適合プラグとの組み合わせ時であり、コネクタのバルク抵抗を含む。)	
	各種環境試験後の接触抵抗変化値 Δ15mΩ 以下	各種環境試験条件は表 1 参照のこと。	

表 1 : 各種試験条件

試験項目	試験条件	準拠規格 (参考規格)
温度試験 (Cold)	- 25°C / 2時間	IEC 60512 11j
温度試験 (Heat)	85°C / 16時間	IEC 60512 11m
湿度試験 (定常状態)	25 ~ 65°C、相対湿度95% / 96時間	EIA 364-21C
熱衝撃試験	- 55°C → 25°C → 85°C → 25°C / 5サイクル	EIA 364-21C
塩水噴霧	塩化ナトリウム5%溶液、35°C / 48時間	
コネクタ嵌合 耐久性	挿抜 100回	IEC 60512 9a /EIA 364-09
耐衝撃性	490m/s ² 、11ms、X,Y,Z軸方向。各3回	IEC 60512 6d
振動試験	10 → 500 Hz、振幅0.35mm又は50m/s ² 、1分間掃引 / X・Y・Z方向各2時間	

7 包装 & 表示

本品は、プラスチック袋に納め、更にカートンにて梱包された形態で出荷される。

本品のカートンには、次に示す事項が記入されている。

- 1) 品名 2) 数量 3) 販売会社 4) ロット番号

8 保管

製品保管の際には、無負荷、常温（5~35°C）、常湿（相対湿度70%以下、ただし結露なきこと）の室内で、納入時の梱包状態にて保管すること。

9 取り扱い上の注意

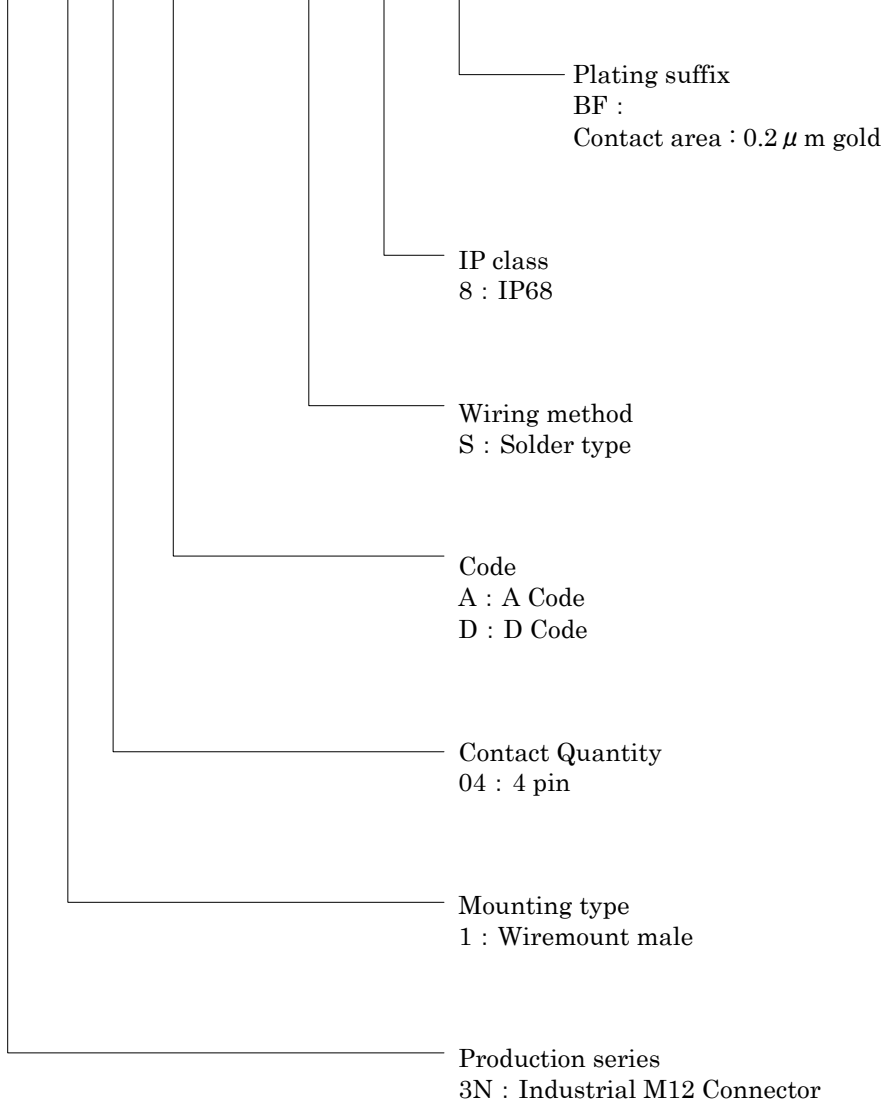
- (1) 電気用品安全法の適用対象外。また、電気工作物にはあたらない。
- (2) 定格や特性は部品としての規定であり、使用時には、使用される機器の法規等満足することを確認の上、使用すること。
- (3) 使用する際は、O-リング、ガスケット等に傷無きことを確認すること。

1 Application

This product specification details the requirement for the 3M Industrial M12 Wiremount Male Connector that is described in the following product numbering information.

Product number information

3 N 1 XX-X 000-X 0 X XX



2 Function

This connector is an Industrial M12 Wiremount Male Connector and can transmit electrical signals by mating with a compatible female connector.

3 Compatible Object

3.1 Compatible connectors

3M™ Industrial M12 Wiremount Female Connector

3.2 Compatible Cable

3-2-1. Wire

AWG 20 to AWG 24 stranded

3-2-2. Cable outer diameter

4.0 to 6.5 mm

4 Related Specification

Reference specification listed in JNPD-1139.

5 Related Standards

IEC 61076-2-101

6 Quality Performance

6.1 Rating

Item	Rating
Current	4.0A Max.
Voltage	250V (DC) Max.
Temperature	-25°C~85°C

6.2 Physical characteristic

(Numeric value) is reference value

TEST DESCRIPTION	REQUIREMENT	TEST CONDITION	RELATED STD. (Reference)
Polarizing Method	35N(3.5kgf) Min.	Tensile speed : 10mm/min.	IEC 60512 13e
Contact Insertion & Withdrawal Force	Insertion(Initial) : 10N(1.0kgf)/pin Max. Withdrawal(Initial) : 15N(1.5kgf)/pin Max.	Tensile speed : 25mm/min.	
Water Proof	Inside no water found	Submersion in water 1m, 24hours	IEC 60529
Soldering Heat Resistance	Connector should not have any defect portions after test.	Soldering iron: 380°C, 3 seconds, 2 times	

Electrical characteristic

TEST DESCRIPTION	REQUIREMENT	TEST CONDITION	RELATED STD. (Reference)
Dielectric withstanding voltage	No appearance of arcing and break down. Leak current : 1mA MAX	Impressed voltage is AC 1000V rms between two adjacent contacts for 1 minute.	EIA 364-21
Insulation Resistance	100MΩ MIN	Impressed voltage is DC500V between two adjacent contacts for 1 minute.	EIA 364-20
Electrical Continuity	Discontinuity 1 μ sec maximum during test.	Electrical test concurrent with vibration.	
Contact Resistance	10mΩ MAX.	The low-signal level contact resistance shall be tested with circuit current of 1A and circuit voltage of 5V maximum. The termination resistance includes bulk resistance of contact, and resistance of solder joints of connectors to circuit boards.	EIA 364-23
	Pre-test resistance measurement versus post-test resistance measurement change is 15mΩ delta maximum.	Refer to Table-2.	

Table 2 : Environmental tests

ITEM	TEST CONDITION	RELATED STD. (Reference)
Temperature (Cold)	Temperature : -25°C Duration : 2 hours	IEC 60512 11j
Temperature (Heat)	Temperature : 85°C Duration : 16 hours	IEC 60512 11m
Humidity (Steady state)	Temperature range : 25 to 65°C, Relative humidity : 95%RH Duration: 96 hours	EIA 364-21C
Thermal shock	-55°C→25°C→85°C→25°C / 5 cycles	EIA 364-21C
Salt Spray	Salt solution: 5% (NaCl), Temperature: 35°C, Duration: 48 hours	
Durability	Operation : 100 times	IEC 60512 9a /EIA 364-09
Shock	490m/s ² , 11ms, 3 cycles, 3 directions (X,Y,Z)	IEC 60512 6d
Vibration	Sweep freq.: 10~500Hz, amplitude: 0.35mm Sweep cycle: 1 min, sweep time: 2 hours Sweep directions: X, Y, Z	

7 Package & Identification

Parts are packaged in plastic bags. Trays are shipped in a carton.

Carton is labeled with :

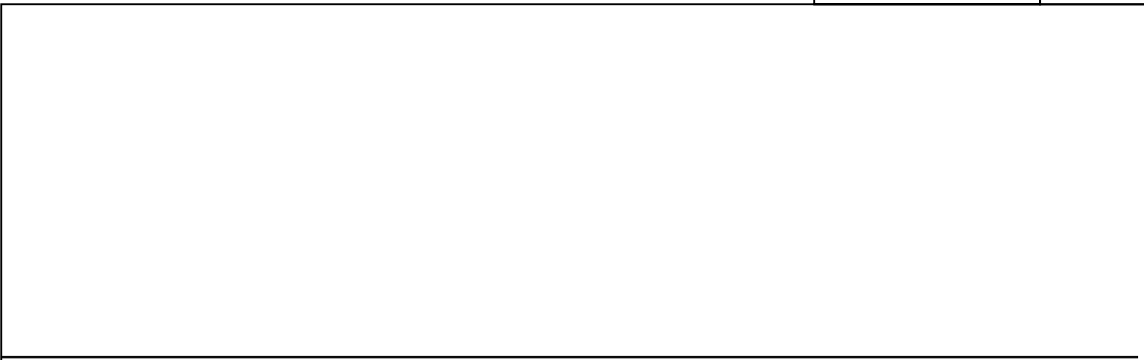
- 1) part number, 2) quantity, and 3) maker name and 4) lot number.

8 Storage Conditions

Store package unloaded in a room with ambient temperature (5~35°C), and ambient humidity (relative humidity under 70%, no dew condensation).

9 Notice For Using

- (1) This connector is exempt from the Electric Appliances and Material Safety Act in Japan and does not fall under the category of electric facilities.
- (2) The specifications in this document are for the connector component itself. Confirm the regulations of the appliances in use.
- (3) When the connector is mated, verify there is not a scratch in the O-ring and gasket.



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