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PRODUCTS SPECIFICATION

TYPE: INSULATION DISPLACEMENT CONNECTOR

PART NO.: NDC 2018A

ISSUED: 14th December 2017

NICHIFU TERMINAL INDUSTRIES CO.,LTD.

Nichifu Terminal Industries Co.,Ltd JAN. 06. 2018

APPROVED	CHECKED	CHECKED	PREPARED
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1. SCOPE This products specification is prepared by NICHIFU TERMINAL INDUSTRIES CO., LTD. and specifies Insulated Displacement Connector (hereafter referred to connector), intended for connection under 100V of indoor electrical wiring by using pliers (JIS B 4614 Size 150).

2. TYPE AND PART NO. Given in Table 1.

Table 1

TYPE	PART NO.	APPLICABLE WIRE SIZE		MAX WIRE OUTSIDE DIAMETER mm	REMARKS COLUMN
		STRANDED mm^2	AWG		
INSULATION DISPLACEMENT CONNECTOR	NDC 2018A	0.5～0.75	AWG 20-18	φ2.8	CONTACT IS NOT REUSABLE AFTER CONNECTION.

3. MATERIAL Given in Table 2.

Table 2

NAME OF PARTS	MATERIAL	COLOR
Housing	Polycarbonate	Black
Cover	Polycarbonate	Green Translucent
Contact	Pre-tin plated copper alloy	—

4. RATING Given in Table 3.

Table 3

ITEM	RATING
Rated Voltage (AC/DC)	300V
Rated Current	8A (MAX)
Working Temperature	0℃～40℃
Insulation Maximum Temperature	120℃ (MAX)

5. PERFORMANCE & TEST

5. 1 TEST CONDITION

(1) Unless otherwise specified, the tests shall be carried out in a room at ordinary temperature (20℃±15℃) and ordinary humidity (65%±20%) as designated in JIS Z 8703. Tests 5.13 and 5.14 and 5.15 shall be carried out by maintaning the specimens in draft free air at 15 to 35℃.

(2) The test wire is AWG 20 and AWG 18 of tin-plated stranded wire, as specified in UL 1007. The wire is placed on the designated position, and connected correctly.

(3) Test current and pull out test force is given in Table 4, insertion and withdrawal force is given in Table 5, performance and test manner is given in table 6.

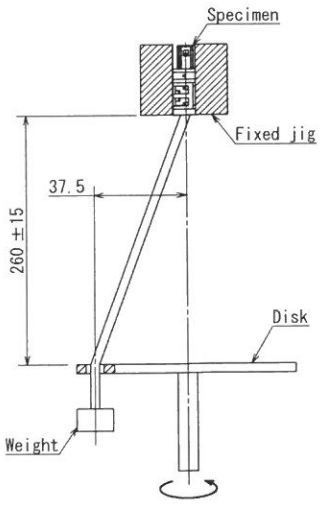
Table 4

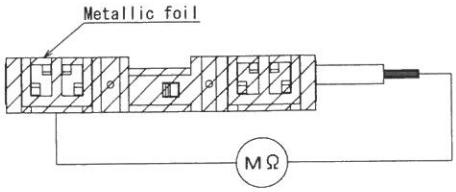
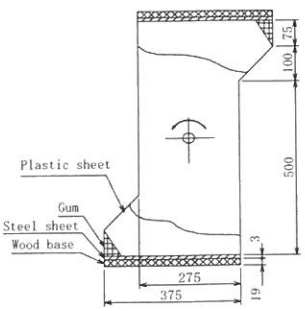
PART NO.	Wire size Stranded	Electrical resistance Test current A	Temperature rise test current A	Heating cycle Heating cycle with voltage		Tensile force N
				Test Current A	Test duration min	
NDC 2018A	AWG20 (0.5mm²)	6	9	9	30	20
	AWG18 (0.75mm²)	8	12	12	30	35

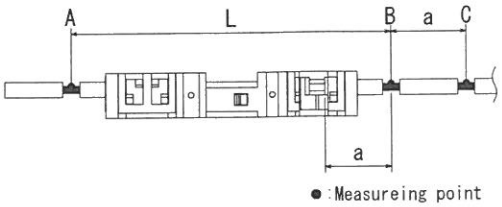
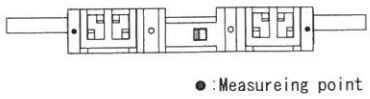
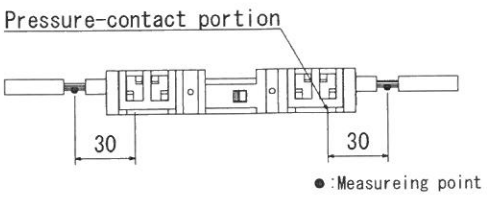
Table 5 Unit : N

Insertion and Withdrawal force		
First insertion	First withdrawal	6th withdrawal
Maximum 67 N	Minimum 13 N	Minimum 13 N

Table 6

TEST	PERFORMANCE	METHOD
5.2 Appearance	There shall be no defects detrimental to use such as rust, cuts or cracks on the connector.	Visual examination.
5.3 Dimensions	Dimensions of each connector part shall comply with the dimensions specified in the drawing.	Dimensions shall be measured with a Vernier caliper specified in JIS B 7507 or other measuring instrument at the least equivalent in accuracy.
5.4 Rotating Test	There shall be no wire pull out, wire breakage or other defects detrimental to service, and the specimen shall comply with the provisions of 5.5 as well. Weight for AWG20(0.5mm²) : 0.3kg Weight for AWG18(0.75mm²) : 0.4kg	Visually examine the wire connection after 15 horizontal rotations at the rate of 10 ±2 r.p.m. Unit: mm  Fig. 1

TEST	PERFORMANCE	METHOD
5.5 Tensile Strength	There shall be no wire pull out, wire breakage or other defects detrimental to service.	The least tensile force specified in Table 4 shall be applied for 10 seconds.
5.6 Resistance to humidity	The specimen shall comply with the provisions of 5.7 and 5.8.	The specimen is placed in thermostatic chamber for 48 hours at humidity 91% to 95% and temperature 20℃ to 30℃. Moisture on the specimen is wiped and carried out to tests 5.7 and 5.8.
5.7 Insulation Resistance	The insulation resistance shall be more than 5MΩ.	As illustrated in Fig.2, insulation resistance shall be measured with the 500V insulation resistance tester.  Fig. 2
5.8 Withstand Voltage	The specimen shall withstand the voltage for 1 minute.	As illustrated in Fig. 2, an AV voltage of 1500V shall be applied for 1 minute.
5.9 Insertion and withdrawal force	The force given in Table 5 shall be satisfied.	The speed of insertion/withdrawal is 1mm /s. The test is carried out 6 times.
5.10 Heat Resistance	The standard test finger shall not contact the charged part. The insulator shall have no splits and deformations which are detrimental to service and shall maintain legible markings.	The specimen is placed in a thermostatic chamber at 120±5 ℃ for 1 hour. The standard test finger with maximum 5N force is applied to the charged part which normally cannot make contact. Examine visually.
5.11 Mechanical Strength	There shall be no breakage and the cover shall remain in place as prior to the test. There shall especially be no breakage, splits and deformation that prevent the charged part from maintaining correct position and from maintaining electrical shock protection.	Unconnected specimen is placed in the test chamber as illustrated in Fig.3, making 50 drops at the rate of 5 r.p.m. Unit: mm  Fig. 3

TEST	PERFORMANCE	METHOD
5.12 Electrical Resistance	The electrical resistance of the specimen shall be less than 15mΩ.	As Illustrated in Fig.4, voltage drop is measured between A and B (RAB), when current, specified in Table 4, is passed. Electrical resistance value is RAB minus voltage drop (between B and C x 2).  Fig. 4
5.13 Temperature Rise	The temperature rise of contact shall not exceed 45k.	The test current as specified in table 4 is passed continuously until the temperatures are stabilized and then measured.  Fig. 5
5.14 Heating cycling	The temperature rise at 125th cycle shall not be over 8K than that of the end of the 25th cycle.	By the method shown in Fig.5, test current and duration specified in Table 4 shall be applied to the assembly and then rested for the same duration. This test is carried out 125 times.
5.15 Heating cycling with voltage	The voltage drop measured at the end of the 384th cycle shall not exceed 1.5 times the value measured at the 48th cycle.	Current in Table 4 is passed through the specimen connected with wire. The condition is kept for 30 minutes and rested for 30 minutes. This cycle is repeated 384th times. At the end of the 48th and 384th cycles the test current in Table 4 is passed under temperature 20±2 ℃ Voltage drop values is then measured when temperature of the specimen is stabilized.  Fig. 6
5.16 Resistance to deterioration	There shall be no cracks. Visual examination.	The specimen is placed in thermostatic chamber at 105±2 ℃ and allowed to stand for 168 hours (7 days) and then it shall be allowed to stand ordinary temperature for more than 4 hours.

6. MARKING The following items shall be marked.

6.1 Marking on product

(1) Part number, (2) Wire size (AWG), (3) Trade name

6.2 Package In addition to 6.1,

(1) Rating, (2) Quantity, (3) Lot No.

7. PACKAGE Given in table 7.

Table 7

Part number	Parkage details	
	Individual package	Inner package
NDC 2018A	20 pcs / plastic box	200 pcs(20pcs×10box) / Paper package

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