

Project number: SI1407596\_\_\_\_\_

Ratings: IP65\_\_\_\_\_

Manufacturer: CPS Products, Inc.\_\_\_\_\_

Model: SPD60\_\_\_\_\_

Serial/Sample# Prototype 1 and 2\_\_\_\_\_

By: Justina Sanchez\_\_\_\_\_ / \_\_\_\_\_

# IEC / EN / 60529 2.1 Ed 2001 – General Requirements

(Safety requirements for electrical Equipment for measurement, control and laboratory use)



## TEST DATA SHEETS

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## Test for protection against solid objects

### Clause 13.0

	Appliances other than IPXO - test per IEC 60529	IP Numeral
13.1	IP1x per clause 13.2	N/A
	IP2x per clause 13.2	N/A
	IP3x per clause 13.2	N/A
	IP4x per clause 13.2	N/A
	IP5x per clause 13.4 + 13.5	N/A
	IP6x per clause 13.4 + 13.6	P

### Acceptance conditions

		Pass	Fails	N/A
13.3 (IP1-4)	Protection is satisfactory if the full diameter of the probe specified does not pass through an opening	[ ]	[ ]	[X]
13.5.2 (IP5)	No dust where it could lead to tracking	[ ]	[ ]	[X]
	No dust where it could interfere with correct operation	[ ]	[ ]	[X]
	No dust where it could impair safety	[ ]	[ ]	[X]
13.6.2 (IP6)	No dust in enclosure at all	[X]	[ ]	[ ]

Comments: \_\_\_\_\_

Test Equipment ID#: \_6627, 6628, 6642, 6579, SDPM00004 Date: 2014-08-05

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## Test for protection against water

### Clause 14.0

	Appliances other than IPXO - test per IEC 60529	IP Numeral
14.2	IPX1 per clause 14.2.1	N/A
	IPX2 per clause 14.2.2	N/A
	IPX3 per clause 14.2.3 a)	N/A
	IPX3 per clause 14.2.3 b)	N/A
	IPX4 per clause 14.2.4 a)	N/A
	IPX4 per clause 14.2.4 b)	N/A
	IPX5 per clause 14.2.5	P
	IPX6 per clause 14.2.6	N/A
	IPX7 per clause 14.2.7	N/A

### 14.3 : Acceptance conditions

		Pass	Fails	N/A
	No water entered the enclosure	[X]	[ ]	[ ]
	If any water has entered the enclosure it must not			
1.	be sufficient to interfere with the correct operation of the equipment impair safety	[ ]	[ ]	[X]
2.	Impair safety	[ ]	[ ]	[X]
3.	Deposit on insulation parts where it could lead to tracking along the creepage distance.	[ ]	[ ]	[X]
4.	Reach live parts or windings not designed to operate when wet	[ ]	[ ]	[X]
5.	Accumulate near the cable end or enter the cable if any.	[ ]	[ ]	[X]

Comments: \_\_\_\_\_

Test Equipment ID#: 6620, 6611, 6583\_\_\_\_\_ Date: 2014-08-05\_\_\_\_\_

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16.3	TABLE: electric strength measurements			P
test voltage applied between:		test voltage (V)		breakdown
L-N to enclosure		1480 (UL 1449 requirement)		No
Insulation	Test voltage V			
	Rated voltage <sup>a</sup>			Working voltage (U)
	SELV	<=150V	>150V and <=250V	>250V
<i>Basic insulation</i>	500	1000	1250	1.2U +950
<i>Supplementary insulation</i>		1500	1750	1.2U + 1450
<i>Reinforced insulation</i>		2500	3000	2.4U +2400

<sup>a</sup> For multi-phase appliances, the line to neutral or line to earth voltage is used for **rated voltage**. The test voltage for 480 V multi-phase appliances is that specified for a **rated voltage** in the range >150 V and <250 V.

Comments: \_\_\_\_\_

Test Equipment ID#: 6286 Date: 2014-08-05

Project number: SI1407596\_\_\_\_\_

Ratings: IP65\_\_\_\_\_

Manufacturer: CPS Products, Inc.\_\_\_\_\_

Model: SPD60\_\_\_\_\_

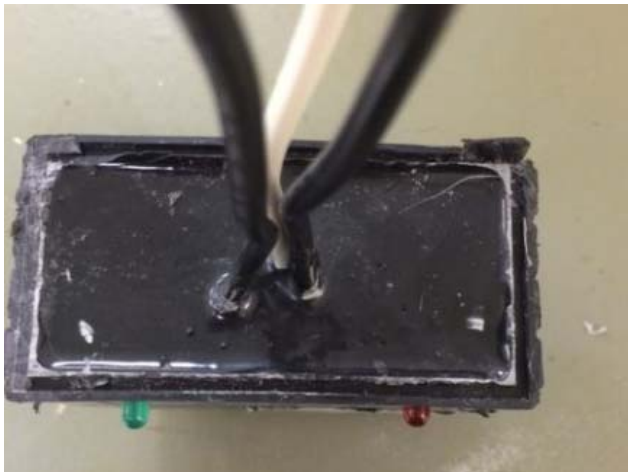
Serial/Sample# \_\_\_\_\_

By: Justina Sanchez *Justina Sanchez* / \_\_\_\_\_

### Photos IP6X before



**IP6X After** – Unit is hermetically sealed therefore no dust could enter the enclosure.



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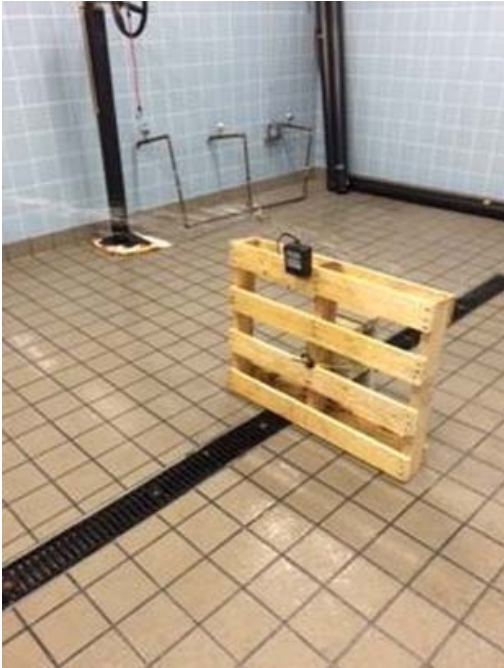
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### Photos IPX5 Before



**IPX5 After – Unit was examined for wet sand which was not found.**

