



March 2, 2005

Mettler-Toledo Inc.
Mr. Leo Champlin
1900 Polaris Pky
Columbus, OH 43240

Our reference: E139501, 05NK03888

Subject: Test report on IPX9K testing of Model MTX load cell

Dear Leo,

Project 05NK03888 was opened to cover the testing of Mettler-Toledo's Model MTX load cell to the requirements of DIN 40 050 Part 9 for an IPX9K rating.

A sample of the MTX load cell was subjected to the Pressure Wash test specified in the DIN Standard. Tests on Model MTX also represent Model 0760 which is similar.

Since no water entered the housing of the Model MTX enclosures during the IPX9K pressure wash test, both MTX and 0760 have been qualified for an IPX9K rating.

The complete test results are detailed in the appendix of this letter.

The test sample will be returned shortly.

This completes our work under project 05NK03888. The project is being closed and our Accounting Department will send an invoice for the incurred charges.

If you have any questions about the content of this letter, please let me know.

Sincerely,

Bill Bartunek (ext. 42564)
Staff Engineer
Conformity Assessment Services
William.N.Bartunek@us.ul.com

Reviewed by,

Michael Mats (ext. 41712)
Section Manager
Conformity Assessment Services
Michael.Mats@us.ul.com



Appendix A

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IP CODE X9K – PROTECTED AGAINST HIGH-PRESSURE/STEAM JET CLEANING (DIN 40 050 Part 9 DATED May 1993, CLAUSE 7.4.3 and Table 8)

METHOD

A sample of Model MTX was mounted per the client's stated specifications. The units were placed in their normal upright mounting position. The unit was subjected to a stream of water from a nozzle with an 8 mm jet distribution with a fan angle of 25 to 35 °. The flow rate was 14 to 16 l/min at a pressure of 8000 to 10000 kPa and a temperature of 75 to 85 °C (or different if agreed to by interested parties). The nozzle was held 100 mm away from the test sample. The sample was rotated at a rate of 4 to 6 rpm. The water spray was directed at angles of 0°, 30°, 45°, 60° or 90° from horizontal for a period of 30 seconds per position.

The equipment was not energized during the test.

RESULTS

The results of the test were acceptable since no water entered the housing.



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May 10, 2005

Mettler-Toledo
Mr. L. Champlin
1900 Polaris Pkwy.
Columbus, OH 43240



Our Reference: E139501, 05NK10479

Subject: Evaluation of Model MTX and 0760 in accordance with IEC60529(89).

Dear Mr. Champlin,

We have completed our investigation and this letter serves as our Report.

For the file record, the subject models were tested according to IEC60529(89) and can be manufactured at Mettler-Toledo, listed above. Tests for Protection Against Ingress of Dust Indicated by the Second Characteristic Number 8 was conducted on Model MTX and is representative of Model 0760.

Original data sheets will be kept in the correspondence file for E139501. The samples have been shipped back to your attention per your request.

PERFORMANCE

IPX8 Water Immersion Test - An IPX8 test was conducted. The results were considered acceptable for Model MTX and 0760 since water did not enter the enclosure. The complete enclosure was mounted in a tank filled with water. The enclosure height is less than 0.85 m, the lowest point of the enclosure is located 1.0 m (3 ft) below the surface of the water. After 24 hrs, the enclosure was removed from the tank, the excess water was removed from the surface of the enclosure, and the enclosure was opened, no water was inside.

SUMMARY

Since the IPX8 test results were in compliance with the IEC60529(89) requirements, Model MTX and 0760 can be rated with an IPX8 environmental enclosure rating.

This letter closes the work for project 05NK10479. As we have completed all work anticipated for this project, you will be billed for the entire cost limit.

Please contact us if you have any questions concerning IEC60529 or the test results.

Sincerely,

Pamela Moloney (ext. 42466)
Senior Project Engineer
Conformity Assessment Services
Department 3011ANBK

Reviewed by,

Matt Mollen
Senior Project Engineer
Conformity Assessment Services
Department 3011 NBK



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

No S529

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the

Mettler Toledo Model SLC820 Digital Load Cell

submitted by Mettler Toledo Limited
 220 Turner Street
 Port Melbourne VIC 3207.

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 60, *Metrological Regulation for Load Cells*, dated July 2004.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 March 2015, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S529' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S529' in addition to the approval number of the instrument.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

The National Measurement Institute reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to an instrument incorporating the pattern approved herein shall be within the limits specified herein and in any approval documentation for the other components.

DESCRIPTIVE ADVICE

Pattern: approved 26 February 2010

- A Mettler Toledo model SLC820 digital load cell of 30 000 kg maximum capacity. These cells may also be known as the model POWERCELL PDX.

Variant: approved 26 February 2010

1. Certain other capacities as listed in Table 1.

Technical Schedule No S529 describes the pattern and variant 1.

FILING ADVICE

The documentation for this approval comprises:

Supplementary Certificate of Approval No S529 dated 23 April 2010
Technical Schedule No S529 dated 23 April 2010 (incl. Table 1)
Figures 1 to 3 dated 23 April 2010

Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the *National Measurement Regulations 1999*.

A handwritten signature in black ink, consisting of stylized cursive letters, positioned to the right of the signature text.

TECHNICAL SCHEDULE No S529

Pattern: Mettler Toledo Model SLC820 Digital Load Cell

Submittor: Mettler Toledo Limited
220 Turner Street
Port Melbourne VIC 3207

1. Description of Pattern

A Mettler Toledo model SLC820 digital load cell of 30 000 kg maximum capacity (Figure 1 and Table 1) and approved for use with up to 6000 verification scale intervals. These cells may also be known as the model POWERCELL PDX.

These load cells shall only be used with indicators which are NMI-approved for use with compatible Mettler Toledo digital load cells.

The load cells are provided with two communication ports and are connected to an indicator in daisy chain fashion as shown in Figure 2. A termination device is used in the second port of the last load cell in the chain.

1.1 Method of Mounting

Mounting is to be in accordance with the manufacturer's instructions and as shown in Figure 3.

1.2 Markings

Each load cell is marked with the following:

Manufacturer's mark, or name written in full	Mettler Toledo
Model number	SLC820 (or POWERCELL
PDX)	
Maximum capacity, E_{max} kg (or t)
Serial number
Pattern approval mark	S529

1.3 Table of Specifications

Specifications for the pattern are given below and in Table 1.

2. Description of Variant 1

Certain other capacities as listed in Table 1.

TABLE 1

Type: Mettler Toledo Model SLC820 (aka POWERCELL PDX) series

Maximum capacity, <i>E_{max}</i> (kg)	20 000	30 000	30 000	30 000	50 000	50 000
Accuracy class	C					
Maximum number of verification intervals, <i>n_{LC}</i>	3000	3000	4000	6000	3000	4000
Minimum value of verification interval, <i>v_{min}</i> (kg)	3.5	4.7	2.4	1.5	5.7	4
Minimum dead load output return value, (DR) (kg)	3.3	5	3.8	2.5	8.3	6.3
Output rating (resolution) counts at <i>E_{max}</i>	200 000	300 000	300 000	300 000	500 000	500 000
Maximum supply voltage	30 V (DC)					
Maximum cable length	300 m (± 0.1 m) (*)					
Communication	CANOpen					
Digital indicator	Mettler Toledo model IND780 indicator with a POWERCELL PDX interface card (#)					

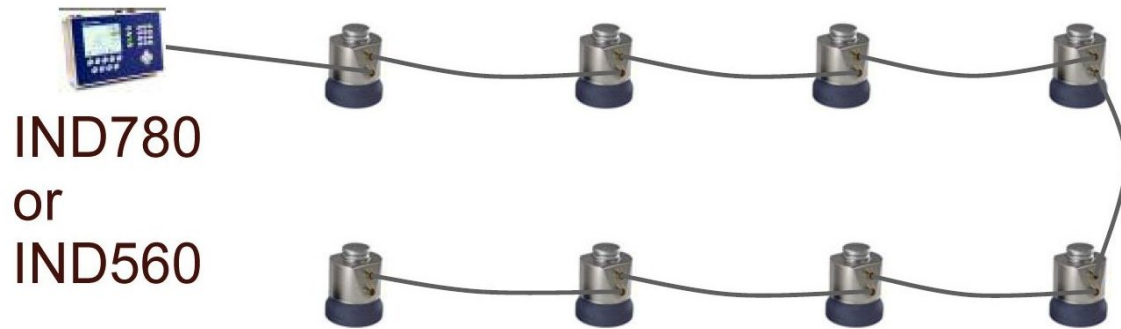
- (*) The load cells are provided with two communication ports into which connecting cables to other load cells and to the indicator are fitted (Figure 1). These cables may be up to 300 metres in length. The load cells are connected to an indicator in daisy chain fashion as shown in Figure 2. A termination device is used in the second port of the last load cell in the chain.
- (#) Or alternative NMI-approved for use with compatible Mettler Toledo digital load cells.

FIGURE S529 – 1



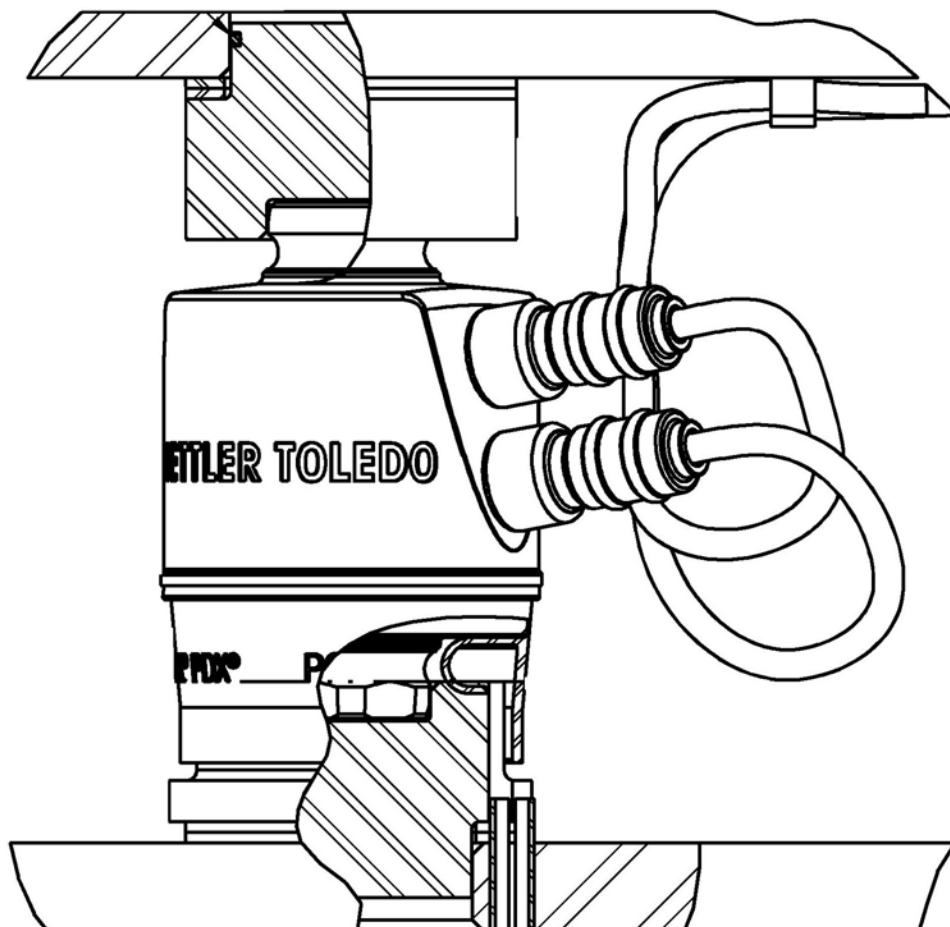
Mettler Toledo Model SLC820 (aka POWERCELL PDX) Load Cell

FIGURE S529 – 2



Typical POWERCELL PDX Daisy Chain Network

FIGURE S529 – 3



Typical POWERCELL PDX Mounting Arrangement