Australian Government
Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S465

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 instruments herein described.

Smith Meter® Model UPT XU-1000-STD-00 Pulse Generator for use with a Flowmeter

submitted by Smith Meter Inc.
1602 Wagner Avenue
Pennsylvania 16510
United States of America

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 117-1, *Measuring Systems for Liquids Other than Water*, dated June 2011.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	16/11/05
1	Pattern approved – certificate issued	21/02/06
2	Variant 1 provisionally approved – interim certificate issued	7/03/08
3	Variant 1 approved – certificate issued	9/07/08
4	Pattern & variant 1 reviewed & updated – certificate issued	10/02/12
5	Pattern amended (submitted by) – certificate issued	07/07/20

Rev	Reason/Details	Date
6	Pattern amended (submitted by) – certificate issued	23/07/25

Conditions of Approval

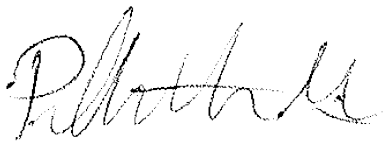
General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S465' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S465' in addition to the approval number of the instrument.

It is the submittor'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.

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



Phillip Mitchell
A/g Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE NMI S465

1. Description of Pattern approved on 16/11/05

A Smith Meter® model UPT (Universal Pulse Transmitter) XU-1000-STD-00 (*) infra-red pulse generator for use with a compatible (#) approved flowmeter (Figure 1).

(*) The suffix can be 00, 01, 02, etc. representing the input coupling.

(#) 'Compatible' is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including all checking facilities.

1.1 Field of Operation

- Pulses per shaft revolution 1000 pulses/revolution
- Maximum pulser shaft speed 300 revolutions/minute
- Output pulses Positive rectangular waveform
- Power supply range 12 to 24 volts DC
- Temperature range –25 °C to +55 °C
- For use with flowmeters approved for accuracy class 0.3 (or higher)

1.2 Pulse Generator

The Smith Meter model UPT (Universal Pulse Transmitter) XU-1000-STD-00 quad channel (overlapping) pulse generator is designed to produce pulses proportional to volume throughput, when fitted to a compatible (#) approved flowmeter and interfaced to a Smith Meter Inc Accuload III model ALIII-S controller as described in the documentation of approval NMI S413 or any other compatible (#) approved calculator indicator or controller.

1.3 Installation

The pulse generator is connected to the flowmeter such that the movement of the pulse generator shaft is directly proportional to the movement of the meter output shaft. When considering the compatibility of the flowmeter and the calculator/ indicator for use with the pulse generator, the consideration shall include the field of operation of each device.

1.4 Checking Facilities

The pulse generator incorporates a quadrature channel pulse output operation and with an overlapping pulse output suitable for detection of pulse transmission errors when interfaced to a compatible (#) approved calculator indicator or controller.

(#) 'Compatible' is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including all checking facilities.

1.5 Sealing and Verification Provision

Provision is made for the pulse generator to be sealed (Figure 1) to prevent access to its electronics.

Provision is made for the application of a verification mark.

1.6 Markings

The following is the minimum data required to be marked on the pulse generator:

Manufacturer's identification mark or trade mark	Smith Meter Inc
Manufacturer's designation (model number)	.....
Serial number	.....
Year of manufacture	.....
Pattern approval sign	S465
Ambient temperature range	–25 °C to +55 °C
Environmental class	Class C

2. Description of Variant 1 **approved on 2/07/08**

With values of pulses/revolution from 100 to 1000.

The value is indicated in the model number, e.g. the pattern, model UPT XU-1000-STD-00, is approved for use with 1000 pulses/revolution, while the model UPT XU-250-STD-00, is approved for use with 250 pulses/revolution.

TEST PROCEDURE No S465

Instruments should be tested in accordance with any tests included in the approval documentation for the flowmetering system/s in which the pattern is included, as appropriate, and in accordance with any relevant tests specified in the National Instrument Test Procedures.

Maximum Permissible Errors

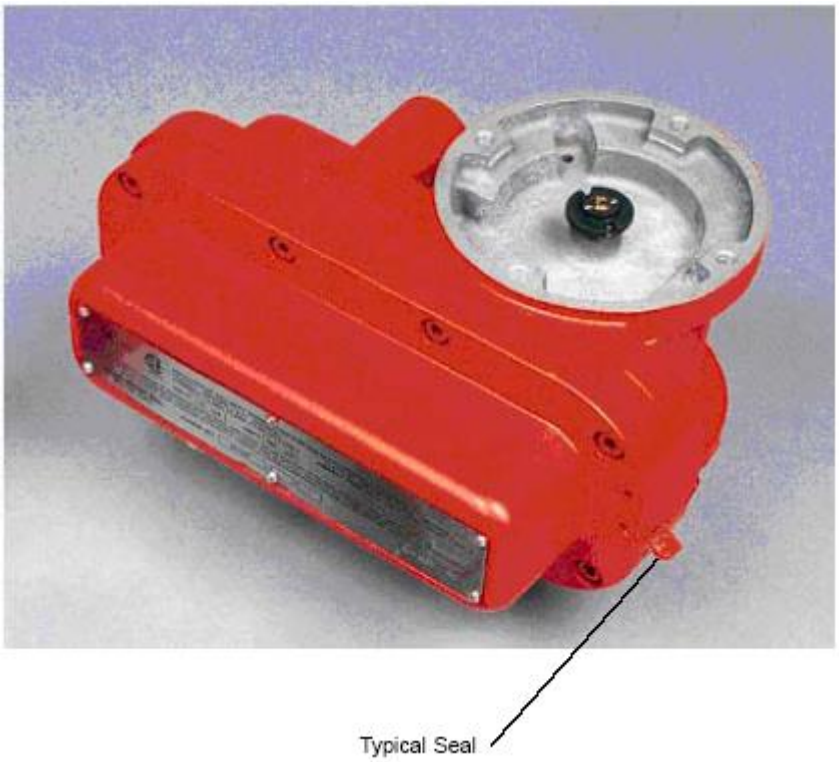
The maximum permissible errors applicable are those specified for flowmetering system in which the pattern is included, as stated in the approval documentation for the system and in Schedule 1 of the *National Trade Measurement Regulations 2009*.

Tests

For initial verification, i.e. whenever installing or retrofitting the pulse generator:

1. Check that the maximum speed of the flowmeter output shaft will not exceed 300 revolutions per minute (rpm).
2. Check that the maximum rate of pulses from the pulse generator will not exceed the maximum input rate of pulses specified for the calculator indicator or controller.

FIGURE S465 – 1



Smith Meter Model UPT XU-1000-STD-00 Pulse Generator

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