



**Australian Government**  
**Department of Industry, Science,  
Energy and Resources**

**National  
Measurement  
Institute**

36 Bradfield Road, West Lindfield NSW 2070

**Interim  
Provisional  
Certificate of Approval  
NMI P6/14D/18**

**VALID FOR VERIFICATION PURPOSES UNTIL 1 March 2023**

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.

Control Systems Technology Model PFS4-5-0D CSRR Belt Weighing Instrument

submitted by      Control Systems Technology Pty Ltd  
47 Fitzpatrick Street  
Revesby      NSW      2212

**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 50, *Continuous totalising automatic weighing instruments (belt weighers), Parts 1 to 3*, dated September 2020.

**DOCUMENT HISTORY**

<b>Rev</b>	<b>Reason/Details</b>	<b>Date</b>
0	Pattern provisionally approved – interim certificate issued	12/02/21

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI P6/14D/18' and only by persons authorised by the submitter.

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.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0B.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to the instrument shall be within the limits specified herein and in any approval documentation for the components where they are approved separately.

This approval shall NOT be used in conjunction with General Certificate No 6B/0.

### Special Conditions of Approval: (Provisional Approval)

This approval is limited to one (1) instrument which the submitter will notify NMI of the location.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI P6/14D/18' and only by persons authorised by the submitter. (Note: The 'P' in the approval number may be a temporary marking.)

The approval will remain provisional pending completion of satisfactory testing and evaluation (results of the initial verification and all subsequent testing shall be copied to the Pattern Approval Unit at NMI).

In the event of unsatisfactory performance the approval may be cancelled (or varied).

The submitter shall implement such modifications as required by NMI. In the event that such modifications (if any are required by NMI) are not made to the satisfaction of NMI, this approval may be withdrawn.

Note: NMI representative(s) will attend and carry out in-situ testing in conjunction with the verification testing.

### 1. Description of Pattern provisionally approved on 12/02/21

A Control Systems Technology model PFS4-5-0D CSRR class 0.2 belt conveyor weigher of 1200 t/h maximum flow rate, approved for use over a flow rate range of 20% to 100% of maximum flow rate.

The instrument is approved with a weigh length of 7.5 m and a belt speed of 4 m/s.

Means shall be provided to ensure that the conveyor cannot move in the reverse direction.

The conveyor has an inclination of up to 12 degrees from the horizontal.

The model PFS4 model Closed Space Roller Ramp (CSRR) style weigh frame is suspended at each corner by a Scaime model SK30X 1000 C6 load cell of 1000 kg capacity (the load cell is described in the documentation of approval NMI S453). The weighing module carries 5 idler roller frames to transfer the load from the conveyor belt to the weighing module.

Belt speed is sensed by the use of a model BTS proximity sensor to detect target flags attached to the tail conveyor pulley of the belt conveyor.

A Control Systems Technology model Cargo Superintendent version WIM3.1 integrator/totaliser is used. The integrator/totaliser may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

## 1.1 Verification Provision

Provision is made for the application of a verification mark.

## 1.2 Descriptive Markings

The instrument carries the following markings, grouped together in a clearly visible Instruments are marked with the following information, on one or more permanently attached nameplates:

Manufacturer's mark, or name written in full	Control Systems Technology
Indication of accuracy class	Class 0.2
Type designation (model number) of the instrument	PFS4-5-0D CSRR
Serial number of the instrument	.....
Pattern approval mark for the instrument	NMI P6/14D/18 (*)
Maximum flow rate	$Q_{\max} = 1200 \text{ t/h}$
Minimum flow rate	$Q_{\min} = 360 \text{ t/h}$
Minimum totalised load	$\Sigma_{\min} = 24 \text{ t}$
Maximum capacity of the weighing unit	Max = 625 kg
Totalisation scale interval	$d = 10 \text{ kg}$
Belt speed	$v = 4 \text{ m/s}$
Weigh length	$L = 7.5 \text{ m}$
Temperature range	$-10^{\circ}\text{C} / 40^{\circ}\text{C}$
Power supply	110 – 240 VAC, 50 Hz
Designation of product(s) to be weighed (if not fixed by installation conditions)	Grain

In addition to the above markings the instrument shall bear the inscription:

'Zero testing shall have a duration of at least ... revolutions'.

The number of revolutions in this statement shall be a whole number of revolutions (at least one) and of a duration as close as possible to 3 minutes.

(\*) The 'P' in the approval number may be a temporary marking.

### TEST PROCEDURE No P6/14D/18

Instruments shall be tested in accordance with any relevant tests for this category of instrument.

### Maximum Permissible Errors

The maximum permissible errors for belt weighers are:

Class 0.2:  $\pm 0.1\%$

### Durability Testing

A reverification test shall be carried out, without any adjustment, after a reasonable period of use not greater than 24 months after initial verification.

Testing shall be carried out by a Servicing Licensee and the test results shall be provided to NMI within a period of 28 days from the date of test for the evaluation of durability.

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

A handwritten signature in blue ink, appearing to be 'Darryl Hines', written in a cursive style.

**Darryl Hines**  
Manager  
Policy and Regulatory Services

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