National Standards Commission

Notification of Change

Supplementary Certificate of Approval No S224

Change No 10

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland
NEW ZEALAND

In Supplementary Certificate of Approval No S224 dated 21 September 1992, the Condition of Approval referring to the expiry of the approval should be amended to read:

"This approval expires in respect of new instruments on 1 November 1997."

NOTE: This was previously extended by Notification of Change No 9 dated 31 July 1996.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

National Standards Commission

Supplementary Certificate of Approval

No S224

Issued under Regulation 9
of the
National Measurement (Patterns of Measuring Instruments) Regulations

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

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Limited
7 Marken Place
Glenfield Auckland New Zealand.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

..../2

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/5/92.
This approval expires in respect of new instruments on 1/5/93.

Instruments purporting to comply with this approval shall be marked NSC No S224 and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked NSC No S224 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 Commission 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 the Commission's Document 106.

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.

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

DESCRIPTIVE ADVICE

Pattern: approved 6/4/87

. Precision Transducers model LS1000 load cell of 1000 kg capacity.

Technical Schedule No S224 describes the pattern.

Variant: approved 4/12/87

1. Model LS500 of 500 kg capacity.

Technical Schedule No S224 Variation No 1 describes variant 1.

Variants: approved 12/1/89

2. Model LS2500 of 2500 kg capacity.

3. Model LS10000 of 10 000 kg capacity.

Technical Schedule No S224 Variation No 2 describes variants 2 and 3.

Variant: approved 19/6/92

4. A model LS250 load cell of 250 kg capacity.

Technical Schedule No S224 Variation No 3 describes variant 4.

FILING ADVICE

Supplementary Certificate of Approval No S224 dated 5/5/89 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Supplementary Certificate of Approval No S224 dated 21/9/92
Technical Schedule No S224 dated 8/7/87
Technical Schedule No S224 Variation No 1 dated 16/3/88
Technical Schedule No S224 Variation No 2 dated 5/5/89 (incl. Table 3)
Technical Schedule No S224 Variation No 3 dated 21/9/92 (incl. Table 4)
Table 1/2 dated 24/12/90 (Notification of Change No 2)
Figure 1 dated 8/7/87
Figure 2 dated 24/12/90 (Notification of Change No 2)
Figures 3 and 4 dated 5/5/89

TECHNICAL SCHEDULE No S224

Pattern: Precision Transducers Model LS1000 Load Cell.

Submittor: Precision Transducers Limited
7 Marken Place
Glenfield Auckland New Zealand.

1. Description of Pattern

The pattern is a Precision Transducers model LS1000 load cell of 1000 kg capacity (refer Figure 1 and Table 1).

1.1 Method of Mounting

Mounting is to be in accordance with one of the methods shown in Figure 2.

1.2 Marking

The following is the minimum data required to be marked on the load cells:

Manufacturer's name or mark
Model number
Serial number
NSC approval number — NSC No S224
Maximum rated capacity

TABLE 1

Type: Precision Transducers		LS1000
Maximum capacity		1000 kg
Maximum number of	(a)	3000
verification	(b)	3000
scale intervals	(c)	3000
	(d)	3000
Minimum value of	(a)	0.1 kg
verification	(b)	0.1 kg
scale interval	(c)	0.2 kg
	(d)	0.2 kg
Output rating (nominal)		2 mV/V
Input impedance (nominal)		520 ohms
Supply voltage (AC or DC)		10–15 V
Cable length (+/- 0.1 m)		3 m
Number of leads		6 (excluding shield)

(a) Instruments with automatic zero track - multi cell applications
(b) Instruments with automatic zero track - single cell applications
(c) Instruments without automatic zero track - multi cell applications
(d) Instruments without automatic zero track - single cell applications

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S224

VARIATION No 1

Pattern: Precision Transducers Model LS1000 Load Cell.

Submittor: Precision Transducers Limited
7 Marken Place
Glenfield Auckland New Zealand.

1. Description of Variant 1

Precision Transducers model LS500 load cell of 500 kg capacity (refer to Table 2).

Mounting is to be in accordance with one of the methods shown in Figure 2, which may also include the use of a threaded backing plate.

TABLE 2

Type: Precision Transducers		LS500
Maximum capacity		500 kg
Maximum number of	(a)	2500
verification	(b)	2500
scale intervals	(c)	2500
	(d)	2000
Minimum value of	(a)	0.06 kg
verification	(b)	0.10 kg
scale interval	(c)	0.13 kg
	(d)	0.20 kg
Output rating (nominal)		2 mV/V
Input impedance (nominal)		420 ohms
Supply voltage (AC or DC)		15 V
Cable length (± 0.1 m)		3 m
Number of leads		6 (excluding shield)

(a) Instruments with automatic zero track - multi cell applications
(b) Instruments with automatic zero track - single cell applications
(c) Instruments without automatic zero track - multi cell applications
(d) Instruments without automatic zero track - single cell applications

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S224

VARIATION No 2

Pattern: Precision Transducers Model LS1000 Load Cell.

Submittor: Precision Transducers Limited
7 Marken Place
Glenfield Auckland New Zealand.

1. Description of Variants

1.1 Variant 2

Model LS2500 load cell of 2500 kg capacity (refer Table 3).

1.2 Variant 3

Model LS10000 load cell of 10 000 kg capacity (refer Figure 3 and Table 3).

Mounting is to be in accordance with the manufacturer's instructions, using one of the methods shown in Figure 4, and shall include the mounting plate supplied and fitted to the load cell.

TABLE 3

Type: Precision Transducers		LS2500		LS10000	
Maximum capacity		2500	kg	10 000	kg
Maximum number of verification scale intervals	(a)	2000		1500	
	(b)	2000		1500	
Minimum value of verification scale intervals	(a)	0.148	kg	0.73	kg
	(b)	0.369	kg	1.83	kg
Output rating (nominal)		2	mV/V	2	mV/V
Input impedance (nominal)		410	ohms	410	ohms
Supply voltage (AC or DC)		10 – 15	V	10 – 15	V
Cable length (± 0.1 m)		3	m	3	m
Number of leads (plus shield)		6		6	

(a) Instruments with automatic zero track.

(b) Instruments without automatic zero track.

National Standards Commission

TECHNICAL SCHEDULE No S224

VARIATION No 3

Pattern: Precision Transducers Model LS1000 Load Cell.

Submittor: Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

1. Description of Variant 4

A model LS250 load cell of 250 kg capacity (refer Table 4).

TABLE 4

Type: Precision Transducers model LS250

Maximum capacity	250	kg
Maximum number of verification scale intervals	1000	
Minimum value of verification scale interval	0.057	kg
Minimum dead load output return for multi-range instruments	0.073	kg
Output rating (nominal)	2.0	mV/V
Input impedance (nominal)	405	ohms
Supply voltage (AC or DC)	5-15	V
Number of leads (plus shield)	6	
Cable length (±0.1 m)	0.5-20	m

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

CHANGE No 1

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Limited
7 Marken Place
Glenfield Auckland New Zealand.

In Technical Schedule No S224 Variation No 1 dated 16/3/88, Table 2 should be amended to read, in part:

Supply voltage (AC or DC)	10 - 15 V

Signed

J. Birch.

Executive Director

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

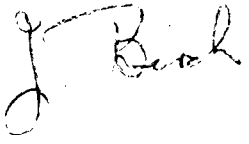
CHANGE No 2

The various changes listed over are made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.



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(a) In Technical Schedules No S224 dated 8/7/87 and No S224 Variation No 1 dated 16/3/88, Tables 1 and 2 should be replaced by the attached Table 1/2 which includes amended minimum values of verification scale interval.

(b) In Technical Schedule No S224 Variation No 2 dated 5/5/89, Table 3 should be amended by changing the cable length for both the model LS2500 and model LS10000 to read "0.5 - 20 m".

(c) Figure 2 dated 8/7/87 should be replaced by the attached Figure 2 which has less approved methods of load cell mounting.

(d) In Supplementary Certificate of Approval No S224 dated 5/5/89, the FILING ADVICE should be amended by adding the following footnote:

"Table 1 and Figure 2 (both dated 8/7/87), and Table 2 (dated 16/3/88) are replaced by means of Table 1/2 and Figure 2 all included as part of Notification of Change No 2 dated 24/12/90."

TABLE 1/2

	(TABLE 1)	(TABLE 2)
Type: Precision Transducers	LS1000	LS500
Maximum capacity	1 000 kg	500 kg
Maximum number of verification scale intervals	(a) 3 000 (b) 3 000	(a) 2 500 (b) 2 500
Minimum value of verification scale intervals	(a) 0.09 kg (b) 0.227 kg	(a) 0.05 kg (b) 0.13 kg
Output rating (nominal)	2 mV/V	2 mV/V
Input impedance (nominal)	520 ohms	410 ohms
Supply voltage (AC or DC)	10-15 V	10-15 V
Number of leads (plus shield)	6	6
Cable length	0.5-20 m	0.5-20 m

(a) Instruments with automatic zero track.

(b) Instruments without automatic zero track.

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

CHANGE No 3

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

In Technical Schedule No S224 Variation No 3 dated 21/9/92 Table 4 for the model LS250 load cell should be amended, in part, as follows:

Minimum value of verification scale interval	0.05 kg

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National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

CHANGE No 4

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

In Supplementary Certificate of Approval No S224 dated 21/9/92, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 31/12/93."

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

CHANGE No 5

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

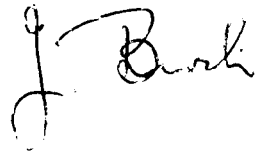
submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

In Supplementary Certificate of Approval No S224 dated 21/9/92, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 30/6/94."

NOTE: This was previously amended by Notification of Change No 4 dated 30/4/93.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.



S224
29 June 1994

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

CHANGE No 6

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

In Supplementary Certificate of Approval No S224 dated 21/9/92, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 31 December 1994".

NOTE: This was previously amended by Notification of Change No 5 dated 17 December 1993.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

CHANGE No 7

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

In Supplementary Certificate of Approval No S224 dated 21 September 1992, the Condition of Approval referring to the expiry of the approval should be amended to now read:

> "This approval expires in respect of new instruments on 31 December 1995".

NOTE: This was previously amended by Notification of Change No 6 dated 29 June 1994.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

CHANGE No 8

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

In Supplementary Certificate of Approval No S224 dated 21 September 1992, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 1 July 1996".

NOTE: This was previously amended by Notification of Change No 7 dated 30 December 1994.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

S224
31 July 1996

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S224

CHANGE No 9

The following change is made to the approval documentation for the

Precision Transducers Model LS1000 Load Cell

submitted by Precision Transducers Ltd
7 Marken Place
Glenfield Auckland New Zealand.

In Supplementary Certificate of Approval No S224 dated 21 September 1992, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 1 July 1997".

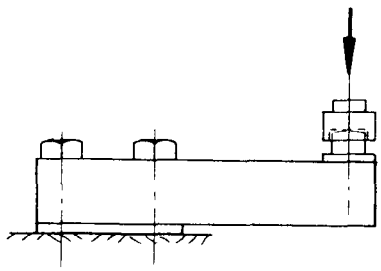
NOTE: This was previously amended by Notification of Change No 8 dated 16 February 1996.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

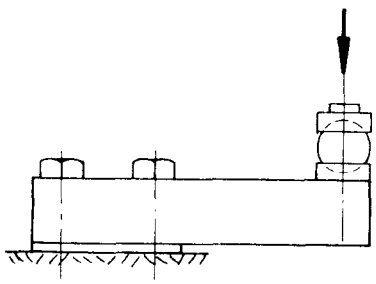
FIGURE S224 - 1

Model LS1000 Load Cell

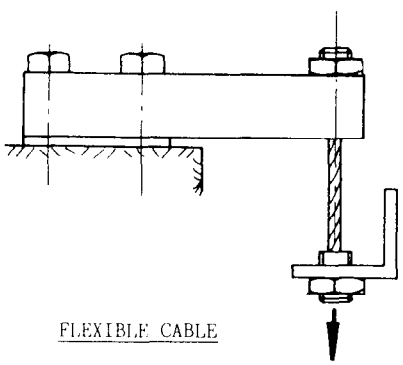
FIGURE S224 - 2



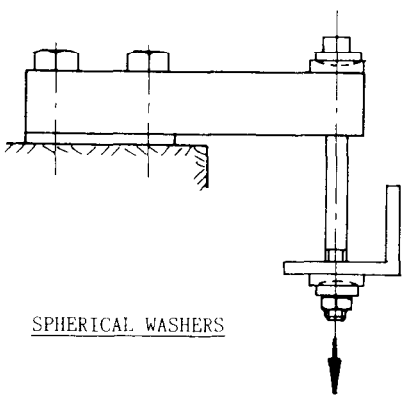
LOAD BUTTON



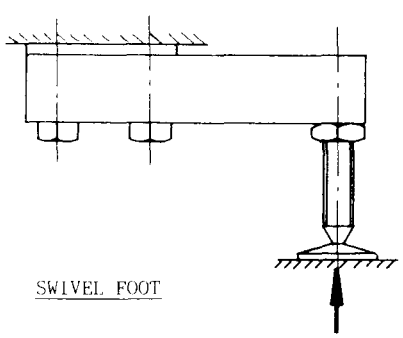
BALL AND CUPS



FLEXIBLE CABLE



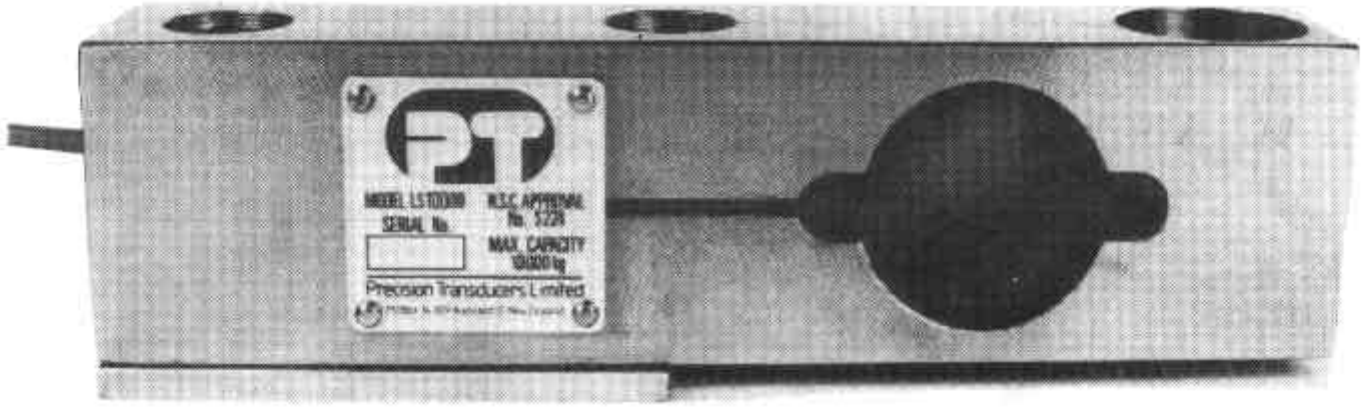
SPHERICAL WASHERS



SWIVEL FOOT

Approved Mounting Methods

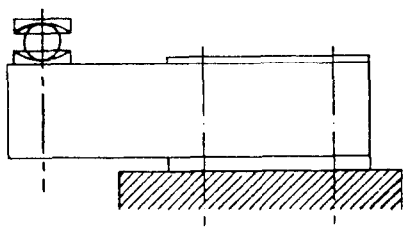
FIGURE S224 - 3



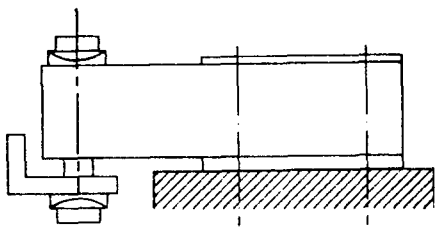
Model LS10000 Load Cell

S224
5/5/89

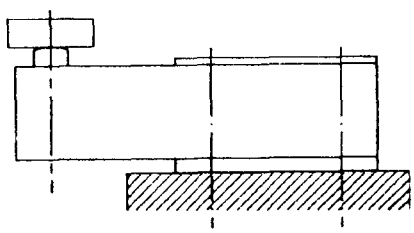
FIGURE S224 - 4



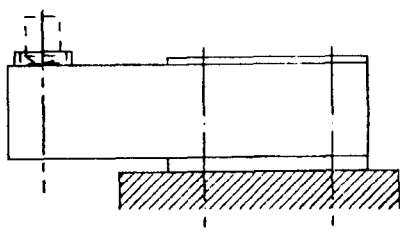
BALL AND CUPS



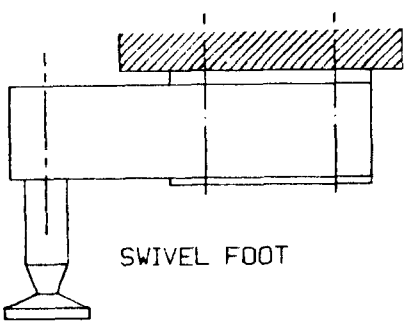
SPHERICAL WASHERS



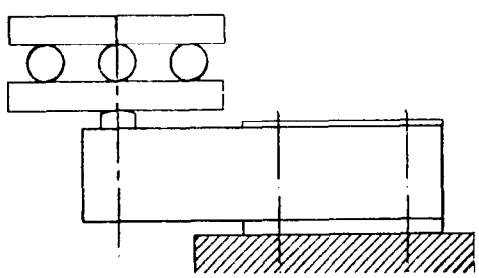
LOAD BUTTON



LOAD CUP



SWIVEL FOOT



3 BALL MOUNT

Typical Mounting Methods - Model LS10000