450 Series

Solid Front • Field Liquid Fillable • Turret Case

450B shown

- **4½" Dial Size**
- **±0.5% Accuracy**
- **Solid Front/Blow-Out Back**
- **Field Liquid Fillable**

The Trerice **450 Series** Process Gauge is designed for the petrochemical and industrial process industries. This solid front, blow-out back gauge is noted for its fiberglass reinforced polypropylene turret case and screwed ring; its sturdy interior design; and its field liquid-fill capability (no kit required). The 450 Series can withstand the most rugged industrial applications, while maintaining precise accuracy. Wetted parts are bronze tube/brass socket, stainless steel, or Monel.

- Optional features available: Please consult the Options & Accessories Section for details.
- For correct use and application of all pressure gauges, please refer to: Pressure Gauge Standard ASME B40.100.

Specifications

Models		Wetted Parts
450B **450LFB**	(dry) (liquid-filled)	Bronze tube, brass socket
450SS **450LFSS**	(dry) (liquid-filled)	316 stainless steel* tube and socket
450M **450LFM**	(dry) (liquid-filled)	Monel tube and socket (meets NACE MR 01.75)

Dial Size	4½"
Fill	Glycerine. Other fills available. See Options & Accessories
Movement	Stainless steel
Connection	Lower male or lower back male, ¼ or ½ NPT
Case	Fiberglass reinforced polypropylene, turret, solid front with blow-out back
Ring	Threaded fiberglass reinforced polypropylene
Window	Acrylic
Pointer	Micro adjustable, black finished
Dial Face	Aluminum, white background with black graduations and markings
Accuracy	±0.5% Full Scale, ASME B40.100 Grade 2A

Maximum Temperature

450B, 450SS, 450M: **250°F** (**121°C**)

450LFB, 450LFSS, 450LFM: **150°F** (**65°C**)

Approximate Shipping Weight

450B, 450SS, 450M: 2.2 lbs [1.00 kg]

450LFB, 450LFSS, 450LFM: 3.1 lbs [1.41 kg]

* Ranges over 10,000 PSI have Ni-Span-C tube.

HOW TO ORDER

Sample Order Number: **450LFB 45 02 L D 110**

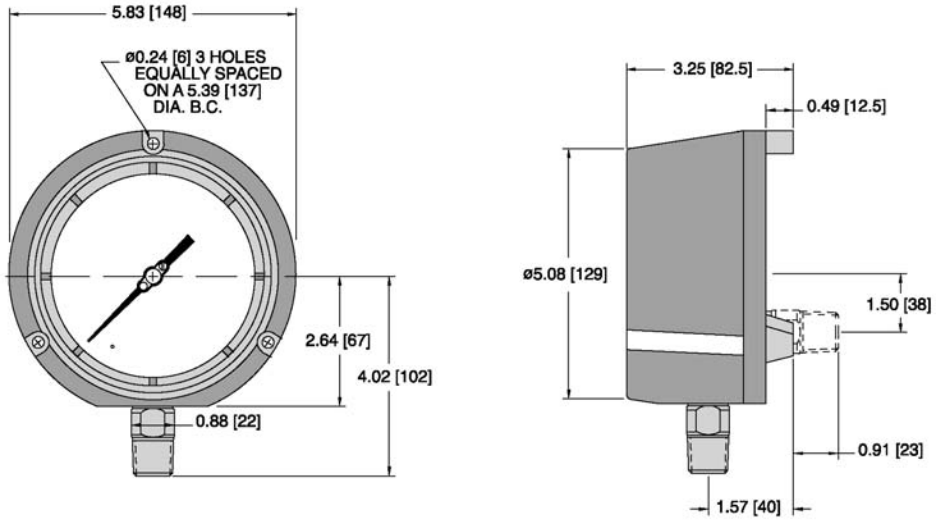
Model	Dial Size	Connection Size	Connection Location	Units of Measure	Range Code
450B **450LFB** **450SS** **450LFSS** **450M** **450LFM**	**45** 4½"	**02** ¼ NPT **04** ½ NPT	**L** Lower **B** Back	**A** psi **B** kPa **C** kg/cm² **D** psi/kPa **E** psi & kg/cm²	See Standard Ranges

12950 W. Eight Mile Road • Oak Park, MI 48237-3288 • TEL:248/399-8000 • FAX: 248/399-7246 • www.TRERICE.com

450 Series

All dimensions are nominal. Dimensions in [ ] are in millimeters.

Solid Front • Field Liquid Fillable • Turret Case



Standard Ranges

psi Ranges (A)				kPa Ranges (B)				kg/cm² Ranges (C)			
Range Code	Specific Range (psi)	Figure Intervals	Minor Divisions	Range Code	Specific Range	Figure Intervals	Minor Divisions	Range Code	Specific Range	Figure Intervals	Minor Divisions
010	30" Hg to 0	5	0.2	010	-100 to 0 kPa	10	1	010	76 cm Hg to 0	10	0.5
020	30" Hg to 15 psi	5/5	0.5/0.2	020	-100 to 100 kPa	20	2	020	76 cm Hg to 1 kg/cm²	20/0.2	1/.02
030	30" Hg to 30 psi	10/5	1/0.5	030	-100 to 200 kPa	50	2	030	76 cm Hg to 2 kg/cm²	20/0.5	2/.02
040	30" Hg to 60 psi	10/10	1/1	040	-100 to 400 kPa	50	5	040	76 cm Hg to 4 kg/cm²	25/0.5	5/.05
050	30" Hg to 100 psi	30/10	2/1	050	-100 to 600 kPa	100	5	050	76 cm Hg to 7 kg/cm²	76/1	5/0.1
060	30" Hg to 150 psi	30/20	5/2	060	-100 to 1000 kPa	100	10	060	76 cm Hg to 10 kg/cm²	76/1	15/0.1
070	30" Hg to 300 psi	30/50	5/2	070	-100 to 2000 kPa	200	20	070	76 cm Hg to 21 kg/cm²	76/2	19/0.2
080	0 to 15 psi	3	0.1	080	0 to 100 kPa	10	1	080	0 to 1 kg/cm²	0.1	0.01
090	0 to 30 psi	5	0.2	090	0 to 200 kPa	20	2	090	0 to 2 kg/cm²	0.2	0.02
100	0 to 60 psi	10	0.5	100	0 to 400 kPa	50	5	100	0 to 4.2 kg/cm²	0.5	0.05
110	0 to 100 psi	10	1	110	0 to 700 kPa	100	5	110	0 to 7 kg/cm²	1	0.05
120	0 to 160 psi	20	1	120	0 to 1200 kPa	200	10	120	0 to 11 kg/cm²	1	0.1
130	0 to 200 psi	20	2	130	0 to 1500 kPa	300	10	130	0 to 14 kg/cm²	2	0.1
140	0 to 300 psi	50	2	140	0 to 2000 kPa	200	20	140	0 to 21 kg/cm²	3	0.2
150	0 to 400 psi	50	5	150	0 to 3000 kPa	300	20	150	0 to 28 kg/cm²	4	0.2
160	0 to 600 psi	50	5	160	0 to 4000 kPa	500	50	160	0 to 42 kg/cm²	6	0.5
180	0 to 1000 psi	100	10	180	0 to 7000 kPa	1000	50	180	0 to 70 kg/cm²	10	0.5
Ranges over 1000 psi are not available on 450B and 450LFB.											
190	0 to 1500 psi	300	10	190	0 to 10,000 kPa	1000	100	190	0 to 100 kg/cm²	10	1
200	0 to 2000 psi	200	20	200	0 to 14,000 kPa	2000	100	200	0 to 140 kg/cm²	20	1
210	0 to 3000 psi	300	20	210	0 to 20,000 kPa	2000	200	210	0 to 210 kg/cm²	30	2
220	0 to 5000 psi	500	50	220	0 to 35,000 kPa	5000	250	220	0 to 350 kg/cm²	50	2
230	0 to 10,000 psi	1000	100	230	0 to 60,000 kPa	10,000	500	230	0 to 700 kg/cm²	100	10
Ranges over 10,000 psi are only available on 450SS and 450LFSS, and have Ni-Span-C tubes.											
240	0 to 15,000 psi	2000	100	240	0 to 100,000 kPa	20,000	1000	240	0 to 1000 kg/cm²	100	10
250	0 to 20,000 psi	2000	200	250	0 to 140,000 kPa	20,000	1000	250	0 to 1400 kg/cm²	200	20

For dual scale ranges, specify the appropriate **Units of Measure: D** *(psi/kPa) or* **E** *(psi & kg/cm²) followed by the equivalent* **A** *(psi)* **Range Code**. *Other pressure ranges are also available including: Altitude, Ammonia, Refrigerant and Receiver. Consult Special Application Ranges section or factory for availability.*

WM TAO & ASSOCIATES
CONSULTING ENGINEERS

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: December 6, 2016

Attention: **stl-cac@cannondesign.com**

Contact Person / WTA Field Inspector: Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mark Schaefer

Project No. WT 14127.01

☐ UPS ☐ Courier ☒ **Email**

Copies	No.	Description
1 PDF	230600M03	(Submittal No.'s:) ~~(R&B CxSRC)~~
		(Cannon #230600-006) - (Paric #15051-0334) – ~~(WES #607)~~
		➢ **Gauges and Thermometers**

Remarks:

c: **Kelvin Patel**
Kpatel@cannondesign.com

☒ **Furnish as Submitted** ☐ Furnish as Noted

☐ Rejected ☐ Revise & Resubmit

☐ Reviewed ☐

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

14127.01 - 230600 M03
MWS TO REVIEW
11/28/16

WTASHOP - Webster ISB - 23 0600-006

From: STL-CAC <STL-CAC@CANNONDESIGN.COM>
To: 'Patrick Garner' <pgarner@wmtao.com>, "WTASHOP (WTASHOP@wmtao.com)" <WTA...
Date: 11/28/2016 3:35 PM
Subject: Webster ISB - 23 0600-006
Cc: "Patel, Kelvin" <kpatel@CANNONDESIGN.COM>
Attachments: 230600-006 Gauges and Thermometers Product Data.pdf

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Attached for review.

Melissa Pirtle

CANNONDESIGN

1100 Clark Ave
St. Louis, Missouri 63102
T 314.425.8797
cannondesign.com

CANNONDESIGN

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB
PROJECT NAME

8274 BIG BEND BLVD
ADDRESS

NUMBER

WEBSTER UNIVERSITY
OWNER

CANNON DESIGN
ARCHITECT / ENGINEER

Joe Voypick
SUBMITTED BY

230600-006
CONTRACTOR / CM SUBMITTAL NO.

CANNON DESIGN SUBMITTAL NO.

DRAWING / DETAIL REFERENCE

230600
SPECIFICATION SECTION / PARAGRAPH

Icon Mechanical
MANUFACTURER / SUPPLIER

ITEM / PRODUCT ID

REQUIRED DATE

PRIORITY

☐ CRITICAL

ITEM BEING SUBMITTED (check only one)

- ○ Shop Drawings
- ○ Samples (_____ copies)
- ○ LEED Submittal
- ○ Certification / Qualifications
- ○ Record Documents
- ○ Product Data
- ○ Coordination Drawing
- ○ Calculations
- ○ Schedules
- ○ O&M Manuals
- ○ Other _____

ITEM BEING SUBMITTED FOR (check only one)

- ○ Action
- ○ Information Only
- ○ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)

PARIC

PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:
Devin D. Gates

Joe Voypick
REVIEWED BY

11/27/16
DATE

To be completed by Reviewer

23 0600-006
CANNON DESIGN SUBMITTAL NUMBER

11/28/16
RECEIVED DATE

- ○ A. No Exceptions Taken
  No further review of submittal is required.
- ○ B. Make Corrections Noted
  Incorporate corrections in work; resubmission is not required.
- ○ C. Revise and Resubmit
  Revise as noted, and resubmit for review.
- ○ D. Rejected
  Submittal is not in compliance with Contract Documents; provide new submittal.
- ○ E. For Record / Information Only
  Submittal was reviewed for Record / Information purposes only.
- ○ F. Not Required for Review
  Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS

○ See attached sheet(s) for additional comments

REVIEWED BY

DATE

77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0334

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 11/27/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Guages And Thermometers Product Data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	**SENT VIA:**	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☑ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	*Package*	*Code*	*Rev.*	*Copies*	*Date*	*Description*	*Status*
Submittal		230600-006	1		11/27/2016	Guages And Thermometers Product Data	Submitted

NOTES:

CC:

Signed: _____

Devin Gates

icon Mechanical

LETTER OF TRANSMITTAL

TO: Paric Corporation
77 West Port Plaza #250
St. Louis, MO 63146

ATTN: Jason Szachnieski, Devin Gates

DATE: 11/21/16
JOB # : 5768
RE: Webster ISB

We are sending you
( ) Attached ( ) Under separate cover
(X) Shop drawings ( ) Prints ( ) Plans ( ) Samples ( ) Specifications
( ) Copy of letter ( ) Change order ( ) Other

COPIES	DATE	NO.	DESCRIPTION
1	11/21/16	230600-2.10	Gauges & Thermometers

These are transmitted as checked below:

( ) For signature ( ) Approved as submitted ( ) Resubmit ( ) copies for approval
( ) For your use ( ) Approved as noted (X) Submit ( ) copies for distribution
( ) As requested ( ) Returned for corrections ( ) Return ( ) corrected prints
( ) For bids due ( ) Prints returned after loan to us
(X) For review and comment ( ) Other

Remarks: Please return by 12/2/16

COPY TO: file

SIGNED: Alex Chambers

Webster University ISB
Webster Groves, MO

Submittal #:	230600-2.10
Submittal Description:	Gauges & Thermometers
Return By:	12/2/16

Please Note: To avoid scheduling delays and equipment release delays, please submit by the "Return By" date.

CHECKED BY:

DESIGNER: ENGINEER:

X	NO EXCEPTION TAKEN		MAKE CORRECTIONS NOTED
	SUBMIT SPECIFIED ITEM		REVISE AND RESUBMIT
	REJECTED		

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Equipment supplier is responsible for: dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and satisfactory performance of his work.

Job #:	5768
Date:	11/21/16
By:	ARC