

# SPAN™ Liquid Filled Industrial Gauge – 4.5"

## Overview

Span Sub-Sea gauges are designed for rugged service applications. Liquid fill fluid dampens the gauge pointer movement for improved readings and longer life, making these gauges ideal for high shock and vibration applications.

The Zytel case and ring offer good appearance and excellent resistance to chemical, weather, and corrosion attack.

The Span gauge has many optional features that allow a user to develop a basic or special product specification.

## Benefits

- "ICD" patented internal breathing diaphragm allows TOTAL liquid fill with no expansion bubble. Excellent in angled panel mounting applications. ESSENTIAL in any sub-sea or ROV deep water applications. The ICD is standard on all SPAN Sub-Sea gauges.
- Temperature/Pressure Compensated: The ICD compensates the case (to 150F) for changes in internal case pressure caused by fluctuations in ambient temperature. (Especially critical in lower pressure and vacuum gauges.) The ICD also compensates the case for external pressure in Sub-Sea deep water applications. A SPAN exclusive feature.
- Freeze proof: The KEM-X Socket Saver is an internal diaphragm seal to prevent freezing, clogging, and corrosion. It is available on all SPAN gauges.
- Any SPAN instruments can be tested, serialized and certified traceable to N.I.S.T. accuracy standards with Test Points.

## Applications

- Sub-Sea applications
- Military, Marine
- ROV equipment and Panels
- Mobile hydraulic equipment



LFC-412 Span 4.5" Liquid Filled Industrial Gauge



LFS-410 Span 4.5" Liquid Filled Industrial Gauge

## Construction Data

Case	Zytel Nylon – Black
Bezel	Zytel Nylon – Removable
ICD	Internal compensating diaphragm
Socket	316 Stainless Steel - TIG Welded
Bourdon Tubes	316 Stainless Steel Vac to 1000 PSI "C" tube 1500 to 20000 stainless spiral tube
Pressure Connection	¼" npt male
Lens	Acrylic
Pointer	White aluminum
Movement	Precision Swiss movement copper alloy
Dial	Black Aluminum w/ white markings
Fill fluid	High purity glycerin - no bubble
Ranges	Vacuum, compound to 20000 PSI

## Dial Ranges and Intervals

Standard Dial Range	Numbered	Minor	Standard Dial Range	Numbered	Minor
0-15	2	.2	0-1000	100	10
0-30	5	.5	0-1500	300	20
0-60	10	1	0-3000	500	50
0-100	10	1	0-5000	500	50
0-160	20	2	0-6000	1000	100
0-200	20	2	0-7500	1500	100
0-300	50	5	0-10000	1000	100
0-400	50	5	0-15000	2000	200
0-600	100	10			

## Thuemling Instrument Group

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## SPAN™ Liquid Filled Sub-Sea Gauge – 4.5"

### Performance Data

Accuracy	1% Full Scale Grade 1A
Design	ANSI/ASME B40.1
Operating Temp.	-40 to 150F

### Temperature Error

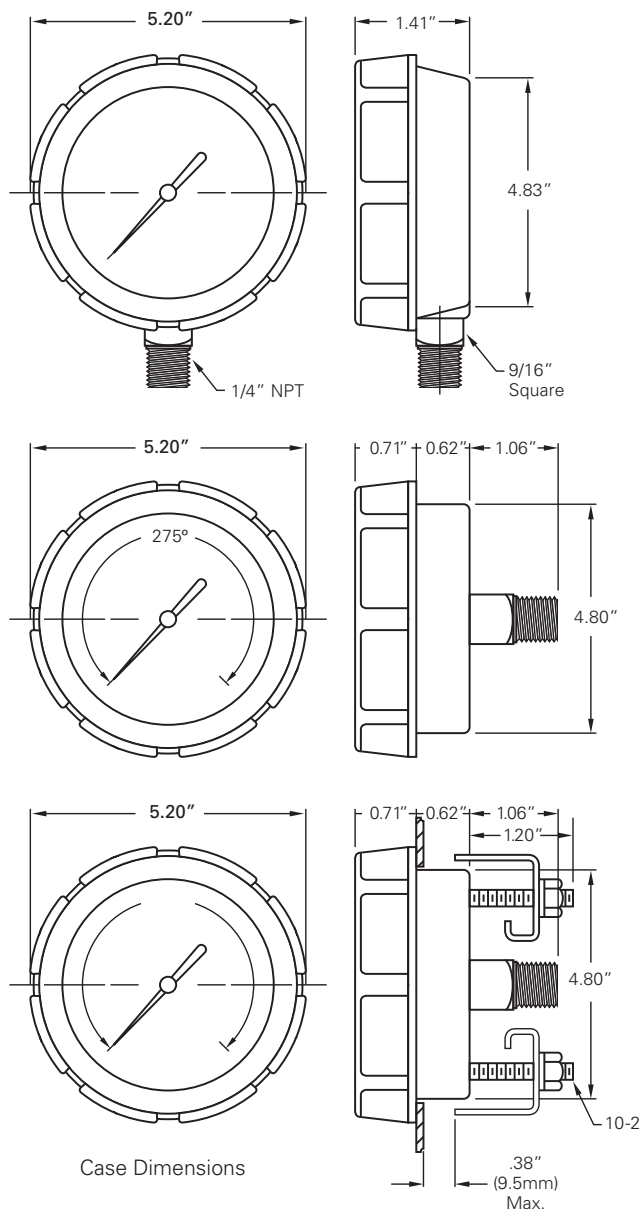
Additional error when temperature changes from reference temperature of 68F (20C) +0.4% for every 18F (10C) rising or falling as a percentage of Span.

### Weather Protection

Weather tight (NEMA 4X / IP 65)

### Optional Extras

KEMX	=	Clog-Freeze proof diaphragm
CERT	=	NIST Certified with calibration points
SFB	=	S.S. Bezel
RECAL	=	Slotted adjustable pointer
O2C	=	Oxygen Cleaning
STUD	=	Back mount studs and hardware for panel mounting
OEM	=	Custom Dials



**Ordering Number for 4.5" Span Sub-Sea Gauge** – Construct by selecting one item from each of the columns below:

Configuration	Dial Size	Accuracy	Wetted Parts	Range	Fill	Options
SUB/LFS = Stem Mount Bottom	4 = 4-1/2	1 = 1% Accuracy	2 = 316L Stainless Steel Tube and Socket	Please specify from chart	G = Glycerin Filled	From option list
SUB/LFC = Center Back Mount						
SUB/LFP = Panel Mount U-Clamp						
<b>Example: SUB/LFS</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>100</b>	<b>G</b>	<b>CERT</b>

( SUB/LFS-412-100-G-CERT )

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