

COMPACT EXTERNAL FLOAT CHAMBER

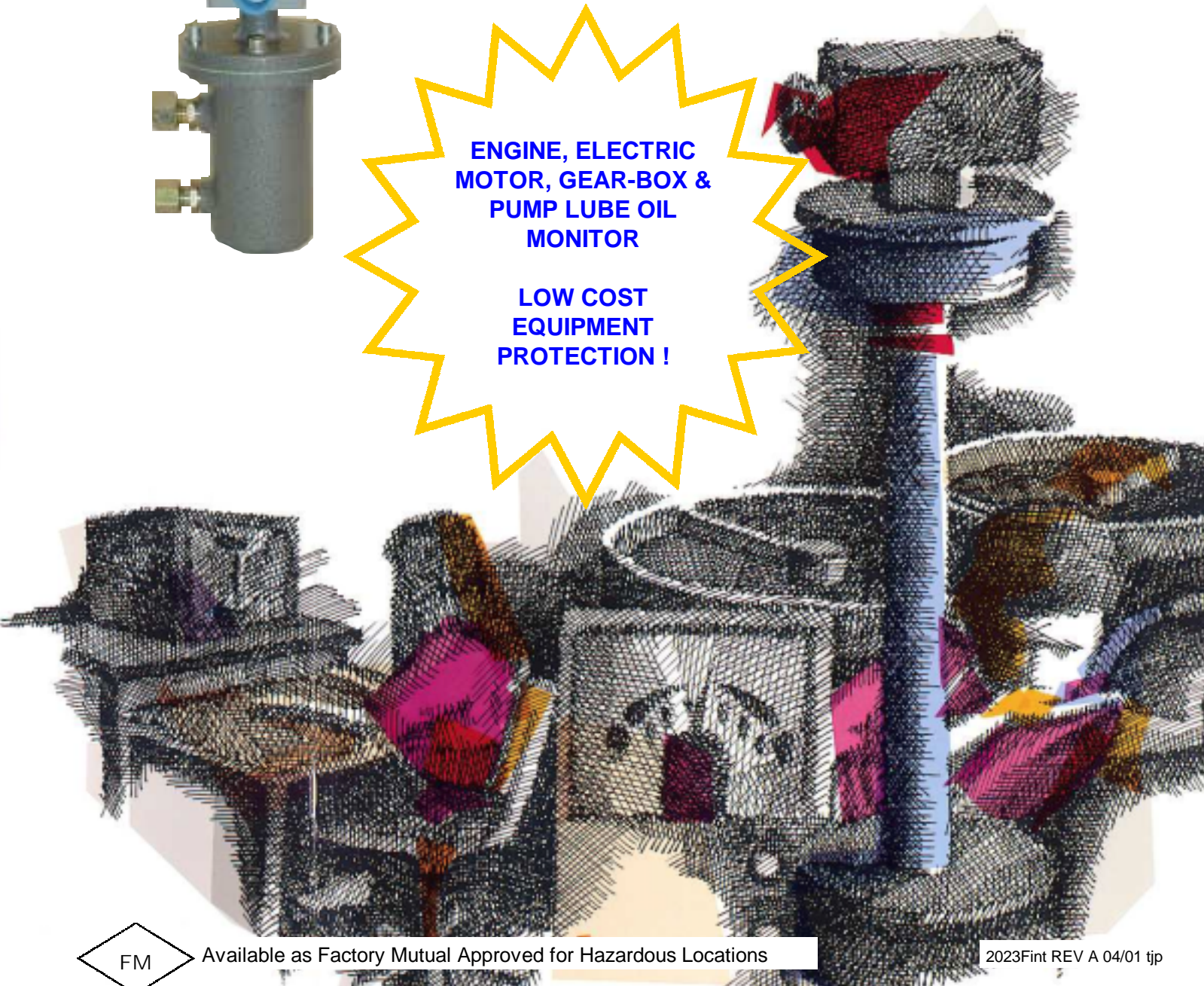
LIQUID LEVEL SWITCHES

FOR MACHINERY & ENGINES



**ENGINE, ELECTRIC
MOTOR, GEAR-BOX &
PUMP LUBE OIL
MONITOR**

**LOW COST
EQUIPMENT
PROTECTION !**



Available as Factory Mutual Approved for Hazardous Locations

2023Fint REV A 04/01 tjp

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Liquid Level Switches for Machinery, Gearboxes, Compressors, Pumps, Motors and Engines

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WWW.KSR-USA.COM



[* DIAL toll free 1-888-KSR-LEVL
for factory application assistance

EXTERNAL CHAMBER-FLOAT LEVEL SWITCHES MODELS XFSI, XFSF, XFBR, XFAL

DESCRIPTION

KSR Kuebler model series XF are flanged top external chamber float type level switches. Use these units to monitor critical oil or coolant levels where entry into the reservoir is not possible or desirable. These models mount outside of your reservoir so they may be taken off line for inspection or alarm verification. Models XF offer standard features that are not available from other fluid level switch manufacturers.

These reservoir level switches are designed for use on industrial engine sumps, pump bearing boxes, speed increasers/reducers, mixers, agitators, gear-cases, electric motors, and other oil level applications where loss of lubricant would cause serious damage or down-time of important and expensive plant equipment.

Use models XF on fuel tanks oil sumps and coolant reservoirs, or wherever a compact, cost efficient level detection device is needed.

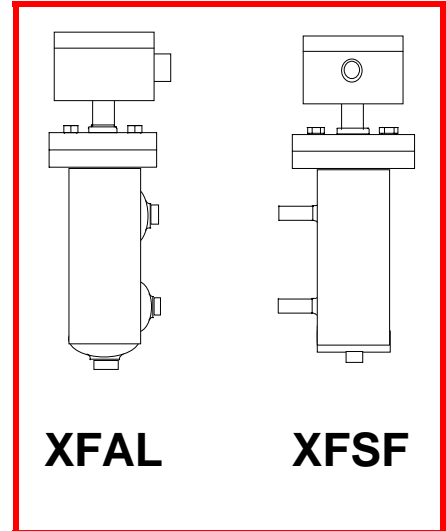
All "XF" units use the KSR Kuebler Magnetic Float design. This design employs special KSR Kuebler magnetic switches engineered to provide years of trouble free operation. Hermetically sealed, the standard models meet NEC requirements for hazardous applications in Division II locations. Model series XF are also available with full Factory Mutual Class 1, Division I, Group B Explosion Proof approvals.

STANDARD FEATURES

Series "XF" external chamber level switches from KSR Kuebler offer the following standard features:

- ◆ **All Stainless Steel** internal parts as **standard**.
- ◆ Flanged top chamber, standard.
- ◆ Tamper proof, hermetically sealed SPDT switches, standard.
- ◆ Wide selection of materials of construction, both for wetted and environmental parts.
- ◆ Factory Mutual Approved for use in hazardous locations.
- ◆ Wide selection of reservoir connections
- ◆ From .70 specific gravity.
- ◆ Up to 360 PSI pressure service.
- ◆ High and low process temperature capabilities.
- ◆ Wide selection of electrical enclosures to meet your requirements, both electrical and environmental.

The above standard features allow you to select a model directly from this order guide.



The standard KSR Kuebler models XFAL and XFSF are shown above.

The XFAL, with a die cast aluminum float chamber shown at right with NPT connections.

The model XFSF, with a fabricated stainless float chamber shown left with welding nipples for permanent installation.

Both models feature stainless steel construction for all internal parts.

KSR Kuebler can be reached by dialing 1-888-KSR-LEVL. An application specialist is ready to assist you.



Features

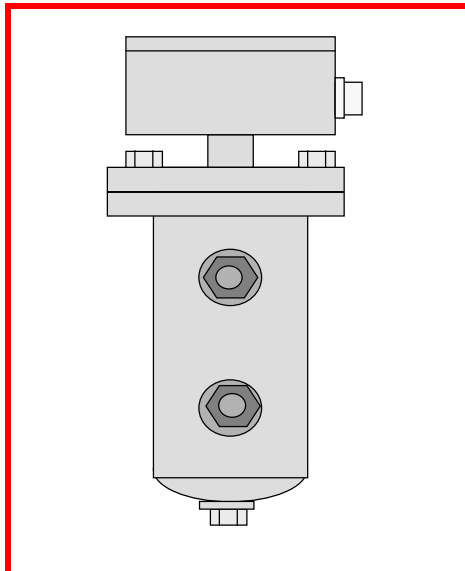
- ◆ All Stainless Steel wetted parts are standard.
- ◆ Standard high and low temperature capability for Series “XF” products.
- ◆ Exclusive compact, low mass design.
- ◆ Several Materials are catalog standard for KSR, not special engineered items.
- ◆ Versatile design, low cost, high performance level switch.
- ◆ Wide selection of reservoir connections are available.
- ◆ One moving part & no electronics required.

Benefits

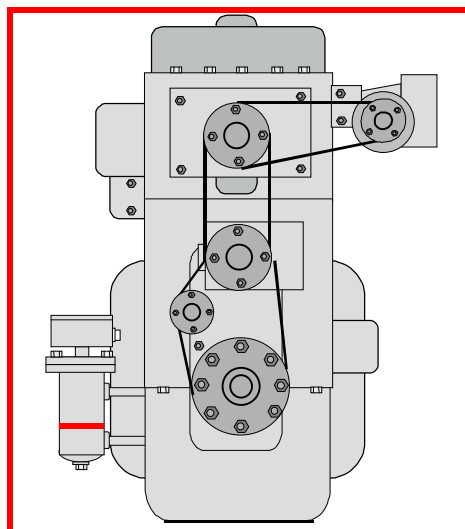
- ◆ Corrosion resistant materials and easy access to internals.
- ◆ KSR Kuebler series “F” are suitable for services from -100°F up to +300°F.
- ◆ Greatly reduces reservoir stresses.
- ◆ Stainless, Bronze, and Aluminum are standard materials for KSR Kuebler
- ◆ Robust enough to use as a compact process level switch.
- ◆ Match your preferred connection types right from the catalog.
- ◆ Float is reliable. No springs, levers or electronic components to fail.

All KSR Kuebler series XF reservoir level switches feature hermetically sealed high current type switch contacts. KSR glass sealed magnetic switches are designed for thousands of operations. Use models XF for low level alarm or wire into the equipment’s emergency shutdown circuit.

These units are cost effective and compact. Model XF is designed to fit into tight places *and* tight budgets.

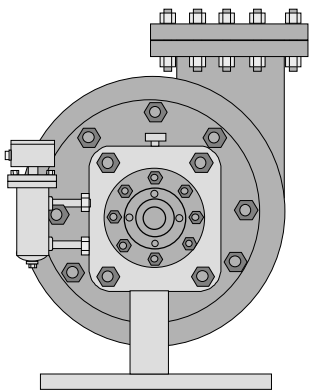


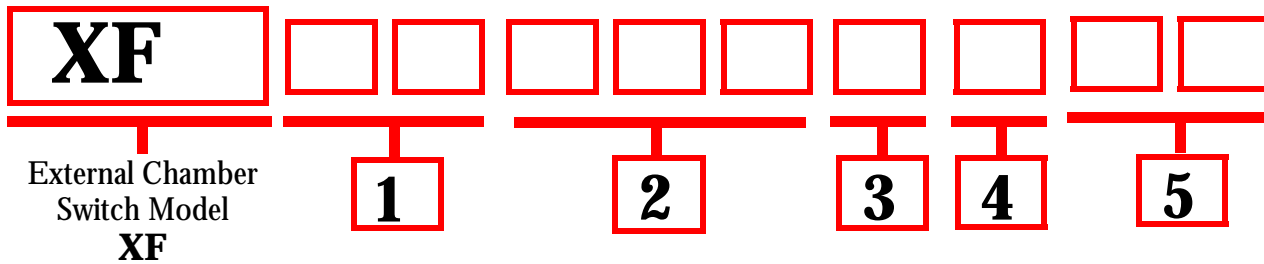
Typical Unit
A KSR Kuebler model XF level switch unit is shown above with compression type tubing connections.



Models XFAL installed above:
Model XFAL are shown installed on an industrial engine to provide a Low Oil level alarm function. When mounted with isolation valves, the models “XF” may be taken off line to test alarm circuits without removing unit from the engine as with integral or in sump devices.

Models XFAL installed at right:
Model XFAL is shown installed on a large pump to monitor a **low oil** level condition. Mounted in tandem with traditional oiler bulbs, the KSR unit provides an extra measure of protection by notifying the operator when an oil seal may have failed-long before a major failure has occurred. Especially important in applications when an operator is not present such as an un-manned oil rig or remote pump stations. Inexpensive protection for expensive machinery.





TO CREATE A COMPLETE MODEL NUMBER, FILL IN THE BLOCKS

1. MATERIALS OF CONSTRUCTION (Chamber Material): **AL= Aluminum**, Die Cast, Heavy Wall, Powder Coated; **SC= Investment Cast, Heavy Wall, 316 Stainless steel**; **SF= Fabricated 316 Stainless Steel**; **BR =Cast Bronze, Heavy Wall**; **TI=Titanium**. **NOTE:** Float selection can be Titanium or 316Ti stainless steel on any model.

2. CONNECTION SIZE AND TYPE: **T05=1/2" Compression Fittings for 1/2" Tubing**, **N25=1/4" NPT Female Threaded Body Connections**, **XXX = Special Customer Specified Connection Type.** (Flanges available on model XFSF and XFTI)

3. ELECTRICAL HOUSING: **4=NEMA 4X die cast aluminum with industrial gray epoxy coating & 1/2" NPT conduit entry (also comes standard with cable gripper fitting)**; **5= NEMA 4X stainless steel enclosure with 1/2" NPT conduit entry**; **7=NEMA 7 explosion proof & 4X cast aluminum with KSR blue epoxy coating & dual 3/4" NPT female conduit entries.**

Note: Select FM in field #5 below for explosion proof unit - Explosion Proof units are only available with model types XFSF and XFTI - fabricated float chamber construction type units.

4. FLOAT SELECTION (Specific Gravity): **T = Titanium float, .72 minimum specific gravity**; **S = 316Ti stainless steel float, .80 minimum specific gravity.**

5. HAZARDOUS AREA SERVICE (Factory Mutual Approvals): **FM = Class 1, Division I, Group B Explosion Proof Type**; **N4 = General Purpose Applications or Division II hazardous area applications ***

Note: Explosion Proof units are only available with model types XFSF and XFTI - fabricated float chamber construction type units.

* NEC Part 500 permits hermetically sealed switches in Division II locations providing a General Purpose (NEMA 4) enclosure is provided.

*NOTE: This pressure rating is for the float chamber only. The float or connections you select may lower the "as installed" pressure rating.



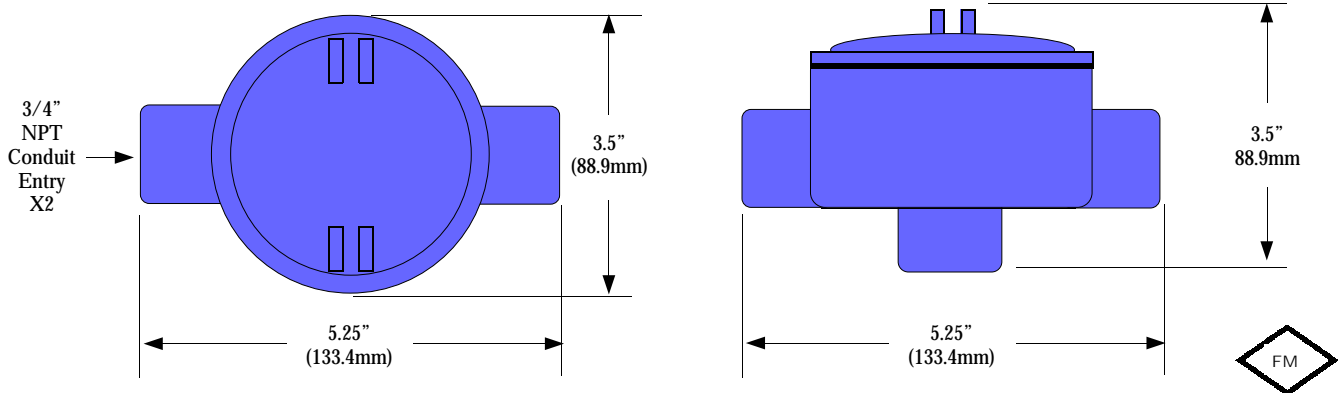
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Models XF Specifications	XFAL	XFBR	XFSC	XFSF
Type & Quantity of Switches	1 SPDT	1 SPDT	1 SPDT	Up to 4 SPDT
Float Chamber Body Material	Die Cast Aluminum Alloy	Cast Bronze	Investment Cast Stainless Steel	Fabricated Stainless Steel
Switch Rating A.C. / D.C. Volts	1 Amp @ 240 VAC 1 Amp @ 125 VDC (non-inductive)	1 Amp @ 240 VAC 1 Amp @ 125 VDC (non-inductive)	1 Amp @ 240 VAC 1 Amp @ 125 VDC (non-inductive)	1 Amp @ 240 VAC 1 Amp @ 125 VDC (non-inductive)
Switch Hysterisis	<.5mm (.020") typical	<.5mm (.020") typical	<.5mm (.020") typical	<.5mm (.020") typical
Terminal Block Type	Ceramic or Plastic	Ceramic or Plastic	Ceramic or Plastic	Ceramic or Plastic
Maximum Operating Pressure*	87 PSI (6 Bars)	230 PSI (25 bars)	230 PSI (25 bars)	230 PSI (25 bars)
Maximum and Minimum Process Temperature*	302°F (150 C) Max. -50°F (-87C) Min.	302°F (150 C) Max. -50°F (-87C) Min.	302°F (150 C) Max. -100°F (-87C) Min.	302°F (150 C) Max. -100°F (-87C) Min. (Up to 650°F on Request)
Minimum Specific Gravity	.72 (Titanium Float) .80 (Stainless Float)	.72 (Titanium Float) .80 (Stainless Float)	.72 (Titanium Float) .80 (Stainless Float)	.72 (Titanium Float) .80 (Stainless Float)
Conduit Entry Size NEMA 4 Aluminum or S/Steel Housing	1 ea. 1/2" NPT	1 ea. 1/2" NPT	1 ea. 1/2" NPT	1 ea. 1/2" NPT
Conduit Entry Size NEMA 7 (Group B)	2 ea. 3/4" NPT (as applicable)	2 ea. 3/4" NPT (as applicable)	2 ea. 3/4" NPT (as applicable)	2 ea. 3/4" NPT

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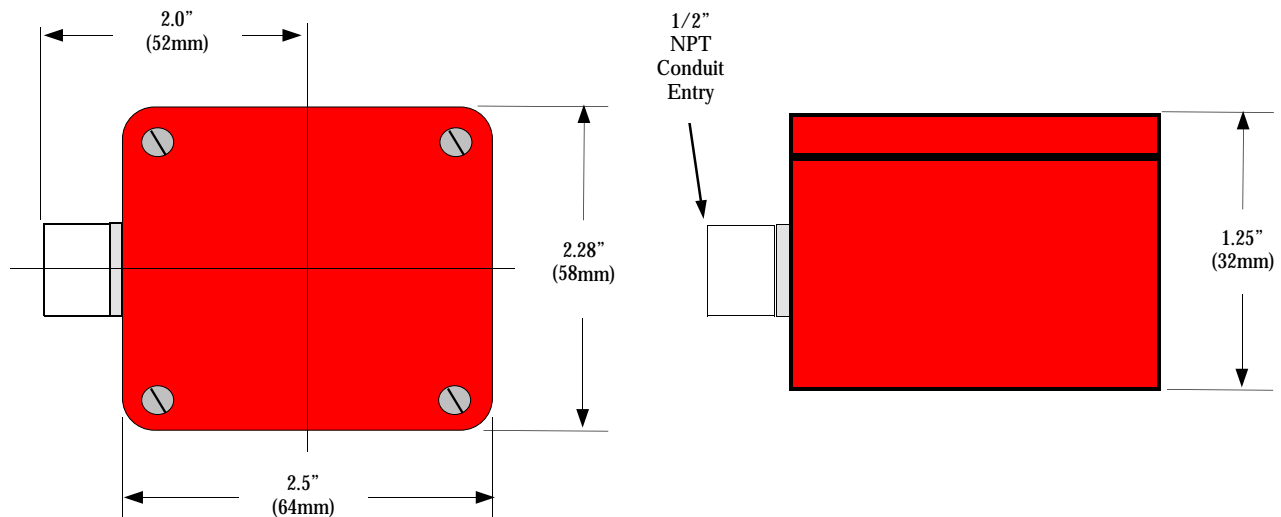
ELECTRICAL ENCLOSURE DIMENSIONS AND DETAILS

KSR TYPE NEMA 7/9 & 4X



Explosion Proof Enclosure, Cast Aluminum, KSR Kuebler Blue Epoxy Finish. Furnished standard with two (2) 3/4" NPT conduit entries. Housing is Factory Mutual, Canadian Standards Association Approved.

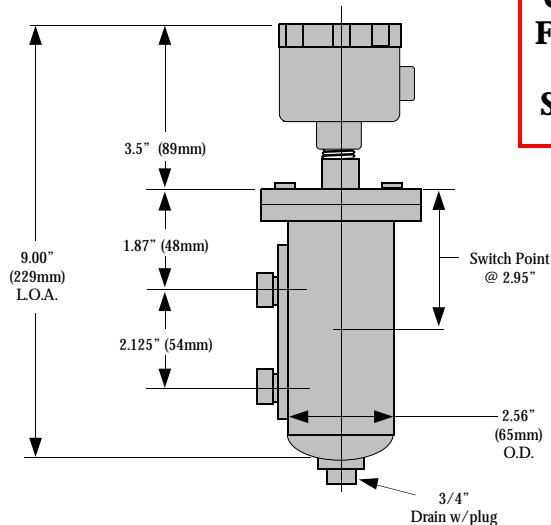
KSR TYPE NEMA 4



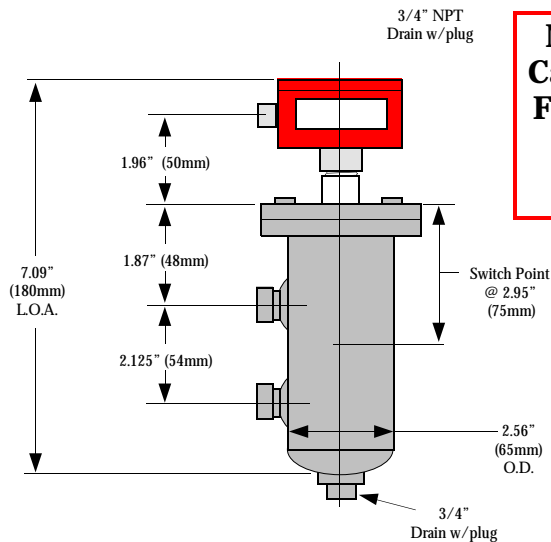
KSR Kuebler general purpose NEMA 4X enclosure. Made from high pressure die cast aluminum with keyed and gasketed cover. Stainless steel captive cover screws and 1/2" NPT conduit adapter fitting. Available with dual conduit entries. Housing is weather and dust tight and epoxy painted.

NOTE: Please consult the installation and operation manual, or contact the factory for dimensional information on KSR Kuebler's exclusive Stainless Steel Electrical Enclosures.

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**Model XFSC
Cast Stainless
Float Chamber
w/Stainless
Steel Housing**



**Model XFAL
Cast Aluminum
Float Chamber
w/NEMA 4
Housing**

For custom dimensions, select models XFSF or XFTI

Modeles XFSF and XFTI have a fabricated float chambers. These units may be built to your exact dimensional requirements. Centerline dimensions for side and side (horizontal) connections on the chamber body is 100% custom to your specifications. Standard dimensions for this is typically 2.16" (50mm) on the cast units. Fill in your information in the space provided at right and then KSR Kuebler will build this model to your exact dimensions. Switch trip points and switch quantity can then be factory set per your requirements.

Customer Name _____

Customer Ref.# _____

KSR Model # _____

Application Information

Chamber Material _____

Connection Size & Type _____

Connection Rating _____

Connection Centerline _____

Max. Pressure _____

Max. Temp. _____

Min. Temp. _____

Liquid Name _____

Liquid. S.G. _____
(for interface detection)

Electrical Information

Housing Type: NEMA 7 _____ NEMA 4 _____

Switch Quantity _____

Switch Setpoints _____

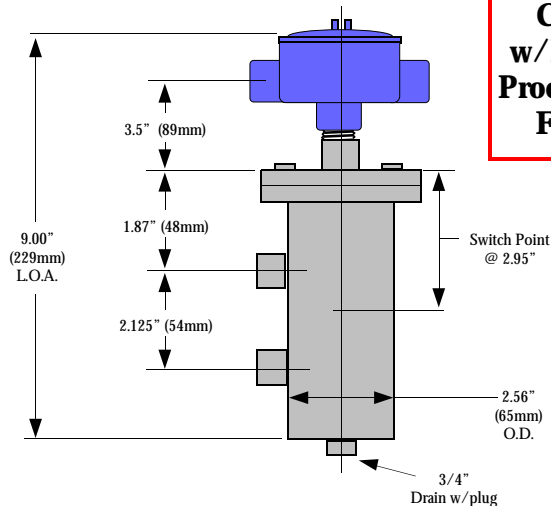
Float Material _____

By _____

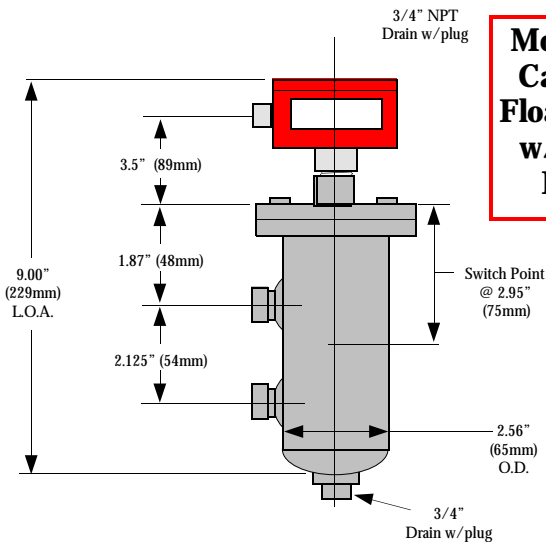
Date _____

Your Fax & E-mail Please

(_ _ _) _ _ _ - _ _ _ - _ _ _



**Model XFSF
Fabricated
Stainless Float
Chamber
w/Explosion
Proof Housing
FM Type**



**Model XFBR
Cast Bronze
Float Chamber
w/NEMA 4
Housing**

Customer Name _____
 Customer Ref.# _____
 KSR Model # _____

Application Information

Chamber Material _____
 Connection Size & Type _____
 Connection Rating _____
 Connection Centerline _____
 Max. Pressure _____
 Max. Temp. _____
 Min. Temp. _____
 Liquid Name _____

Liquid. S.G. _____
 (for interface detection)

Electrical Information

Housing Type: NEMA 7 _____ NEMA 4 _____
 Switch Quantity _____
 Switch Setpoints _____
 Float Material _____
 By _____
 Date _____

Explosion Proof Models for Hazardous Area Applications

Models XFSF and XFTI have fabricated float chamber. These units may be furnished for Explosion Proof applications. They can also be built to your exact dimensional requirements. Centerline dimensions for side and side (horizontal) connections on chamber body is 100% custom to your specifications. Standard dimensions on the fabricated units are typically 2.16" (50mm). KSR can do this dimension to your exact needs. Fill in your information in the space provided at right and then KSR Kuebler will build this model to your exact dimensions. Switch trip point can then be set per your specifications.

Your Fax & E-mail Please

(_ _ _) _ _ _ - _ _ _ _

Models "XF" are KSR Kuebler's low cost solution to lube oil level detection for expensive machinery. No need to invade the oil reservoir, as the XF units are mounted externally. Compact and easy to install. Wire in series with your motor control or system shut-down interlock or use an alarm to notify you if the oil level is low. Never allow a leaky seal to destroy an expensive piece of equipment again. An alarm can allow you to closely monitor oil leaks and give you time to schedule seal changes. Models for aggressive environment made from Bronze, Stainless, or Titanium. Think of how many of these you can use in your facility.

