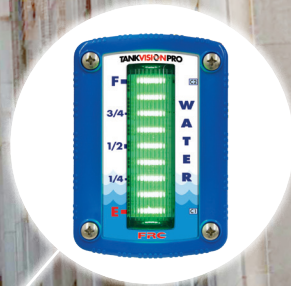# FRC

CONTROL & SAFETY **SOLUTIONS** CATALOG
INSTRUMENTS / CONTROLS / DISPLAYS / ACCESSORIES

SAFE FLEET
Driving Safety Forward™

SUPERIOR ELECTRONICS

BETTER EQUIPPED TO FIGHT

Fire Research Corporation (FRC) offers cutting-edge safety solutions for fire, rescue, and emergency services. FRC has been manufacturing safety products for over 50 years. Our safety equipment, controls, instrument displays, scene lights, video and recording systems, and apparatus accessories all promote a safer working environment at the scene, on the road, or in the station.

MADE IN USA

FRC PRESSURE GOVERNORS
LEADING WITH SAFETY

PROPER OPERATING PRESSURE
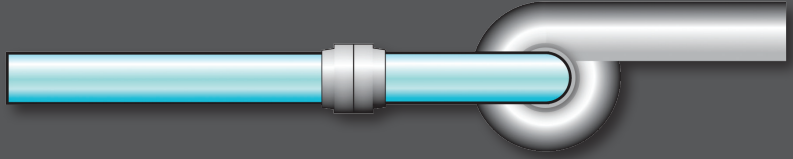
PRESSURE IS ABOVE 45 PSI (3 BAR) WITH
INCONSISTENT FLOW OR AIR IN THE LINE

RPM LIMIT MODE
Pressure above
45 psi (3 BAR)

PRESSURE IS BETWEEN 15 PSI (1 BAR)
AND 45 PSI (3 BAR)

45 psi
(3 BAR)

15 psi
(1 BAR)

LOW WATER CYCLE
Engine Limited to
1100 RPM

PRESSURE IS LOWER THAN 15 PSI (1 BAR)

15 psi
(1 BAR)

NO WATER MODE
Engine Goes to IDLE

FEATURES:

- Constantly monitors discharge pressure and compares it to engine RPM
- Limits RPM increases when conditions arise that fall outside of normal operating parameters
- Message display always alerts operator to what the governor is doing and what type of problem it is encountering
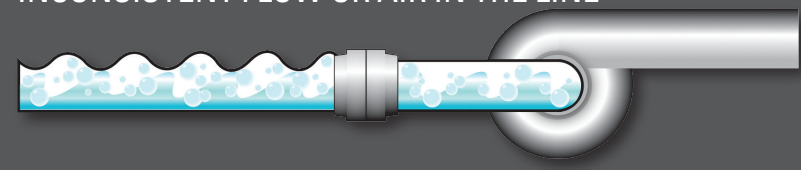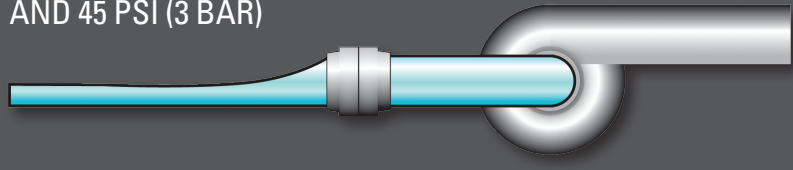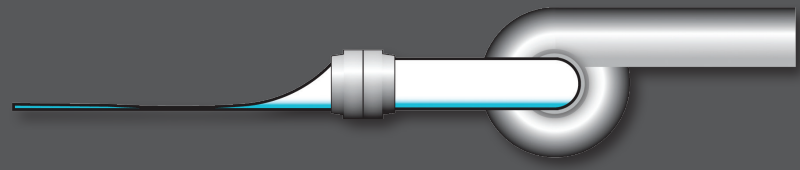
RUNNING AWAY FROM WATER

If pressure drops and an increase in RPM does not bring the pressure back up, the governor recognizes this as a running away from water condition. When this condition occurs the governor switches to the RPM LIMIT MODE, LOW WATER CYCLE or NO SUPPLY WATER, alerts the operator and controls the engine RPM accordingly.

RPM LIMIT MODE

If the discharge pressure stays above 45 psi (3 BAR), the governor behaves like a manual throttle and the operator can raise or lower the engine RPM. If the RPM is manually lowered to a point where the pump is not running away from water and pressure is stable, the RPM limit mode is canceled. When the pressure comes back to the selected pressure setting, the RPM limit mode is canceled and the governor switches to normal operation.

LOW WATER CYCLE

If the discharge pressure is between 15 psi (1 BAR) and 45 psi (3 BAR), the engine is set at 1100 RPM. If the pressure does not rise above 45 psi (3 BAR) in 7 seconds, the governor sets the engine RPM at idle. The governor repeats the low water cycle as long as the discharge pressure is between 15 psi (1 BAR) and 45 psi (3 BAR). When the pressure rises above 45 psi (3 BAR) the governor resumes normal operation.

IDLE **07** Low Water Cycle **Every 7 Seconds** **07** **1100 RPM**

NO SUPPLY WATER

If the discharge pressure is below 15 psi (1 BAR), the engine RPM is set at idle and the message display flashes NO WATER. If, within 3 minutes, the discharge pressure rises above 15 psi (1 BAR) the governor enters the low water cycle. If the discharge pressure does not rise above 15 psi (1 BAR) within 3 minutes, the governor switches to idle mode and cancels the pressure setting.

UNIVERSAL PRESSURE GOVERNOR FEATURES

ADJUSTMENT FEATURES

Quick Response Control Knob
Allows faster and more reliable pressure and RPM adjustments

Available on PumpBoss and INControl 400

Traditional Push Button Control for pressure and RPM adjustment
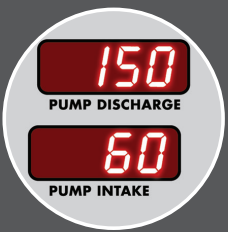Available on Total Control, INControl 300 and ProT

ADDITIONAL FEATURES

Separate Pressure & RPM Buttons with LED indicators

For ease of selecting either mode of operation

Available on PumpBoss, ProT, and INControl

Throttle-Ready LED is on when the required interlock conditions are met and the governor begins pump operations

Digital Master Pressure Display
For pump discharge and intake

Available on Total Control, INControl and ProT

SUPERIOR FEATURES FOR SAFER OPERATION

Always Starts from Idle
Ensures a safer operation when the pressure governor is activated. No unsafe pressure surge

Stays in Selected Mode
Will not drop out of operational mode when the engine RPM is brought back to IDLE by pump operator or when the pump has cavitated

Governor Only Operates when Throttle Ready LED is on
Interlock protection to ensure safe operating conditions are met

Field Programmable Preset for Pressure and RPM
Use the PRESET button to quickly go to the desired pump pressure or engine RPM

Visual Indication and Audible Alarm if Engine Limits are Exceeded
Alerts the operator to unsafe pump operation

Self-Diagnostic Capabilities
Provides alarms and warnings when error or fault conditions exist

Fault Conditions are Recorded
Fault codes, with date and time stamps, are stored for easy maintenance or diagnostics retrieval

USB Port
Allows software updates or revisions to be easily uploaded

PROGRAMMING OPTIONS AT MULTIPLE LEVELS

FRC Governors Provide Flexibility with Over 50 Programmable Options

There are four levels of programming that allow all FRC governors to meet your exact requirements and needs. Programming is simple to change with clear, easy to follow instructions. Passwords are required to access higher level operational codes.

Factory Defaults
Meets or exceeds all NFPA requirements

Manufacturer/Body Builder Programming
Helps match the governor to engine, transmission, pump, and specific vehicle requirements

Dealer/Service Center Codes
Allows for adjusting vehicle related parameters, calibrations, warning and alarm values

Field Settings
Access to date and time, presets, calibration points, and operator functions as needed

CUSTOMIZED PARAMETERS FOR THE PERFECT FIT

Warnings and Alarms
Defaults to NFPA and engine manufacture recommendations, adjustable for all high and low settings

Unit of Measure
Choose from Imperial or multiple variations of metric for control and display

Engine Type
Select engine model and control characteristics

Maximum Pressure Setting
High pressure pumps and sensors require higher settings

Engine Control Ramp Rate and Stability Setting
When necessary these parameters are matched with the pump curve for specific configurations

Knob Rotation
Available in clockwise (default) or counter-clockwise operation.

Remote Activation
Typically used with ARFF apparatus

ALL OF OUR PRESSURE GOVERNORS HAVE THE MOST INNOVATIVE FEATURES IN THE INDUSTRY

Separate Menu & Silence Buttons

Silence Button
Suppresses audio alarms. Used when accessing program features

Menu Button
Used to access detailed information and program features

Bi-colored LED bar graphs
Provides operator with clear visual engine status

GREEN - normal
RED - fault / warning
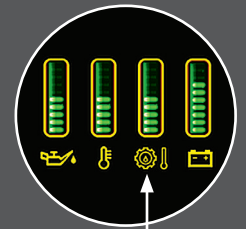
An additional bi-color LED bar graph specific for transmission temperature

2 Line Digital Message Display
Clearly shows the pressure and RPM settings during normal operations, as well as warning alarms and stored data program features

Check Engine and Stop Engine LEDs
Repeat engine warnings from the cab

Built-in Day/Night Sensor
Automatically adjusts the brightness of the LED displays to ensure clear day/night viewing
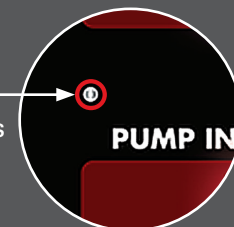
INTUITIVE SMART DEPENDABLE

PUMPBOSS™ MAX

PUMPBOSS™ MAX

A pressure governor has never been so easy to use. Take advantage of the large high, resolution Vivid Impact™ display for effortless navigation. High tactile buttons and a two inch control knob are designed to make gloved operation easier than ever. With it's bright display and rugged design, the PumpBoss Max LCD display is highly visible under sunlight and engineered to perform in extreme temperatures.

New LCD display and custom Graphic User Interface delivers real-time, detailed pump and engine information. Intuitive icons provide key operational status at a glance.

PUMPBOSS MAX FEATURES
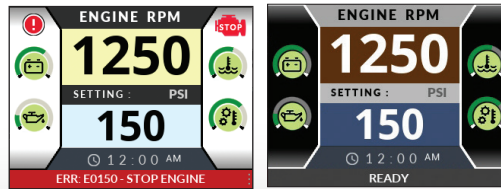
Automatic daytime and nighttime screen modes

- Large, impact resistant 3.5" (89 mm) LCD screen for unmatched durability and high resolution Vivid Impact™ display, high visibility under sunlight

- High tactile keypad buttons make gloved operation easy

- Info center menu button - Parameter value read-out (replaces governor setting display when activated)
- Red IDLE button - brings the engine to idle RPM quickly

- Independent Pressure and RPM mode buttons

- Large control knob - makes gloved operation easy

- Audible Alarm Off button

Space saving design at 3.65" (93 mm) wide 7.42" (188 mm) tall

PUMPBOSS MAX CONSTANTLY MONITORS DISCHARGE PRESSURE

The PumpBoss Max pressure governor uses state-of-the-art programmable microprocessor technology which operates in one of two modes, pressure or RPM. It maintains a steady pump discharge pressure within system capabilities by controlling the engine speed or holding a selected engine RPM.

PumpBoss Max can monitor both the pump intake and discharge pressure, providing improved defense against pump cavitations.

The large, impact resistant 3.5" (89 mm) LCD screen displays engine RPM and provides a constant display of engine oil pressure, engine coolant temperature, transmission temperature, and battery voltage. A message display shows the pressure or RPM setting during normal operations and fault warning alarms as they occur. When selected by the operator it will show monitored information, stored data, and programed options.

- Displays and LEDs automatically adjust for day or night operation
- Interlock - OK to Pump and Throttle Ready indicators
- Large Idle button
- Dual 600 psi (40 BAR) discharge and intake mounted pressure sensors
- No pressure or RPM variation when changing modes
- Always starts in Pressure Mode at idle RPM
- High idle input via external switch for remote activation

EVEN MORE REASONS TO GO MAX

- More intuitive
- Check Engine, Stop Engine, Warning and Alarm icons on display
- Message bar displays error or warning information
- Recognition of no water condition with automatic response
- Limits increase of pressure when in RPM mode
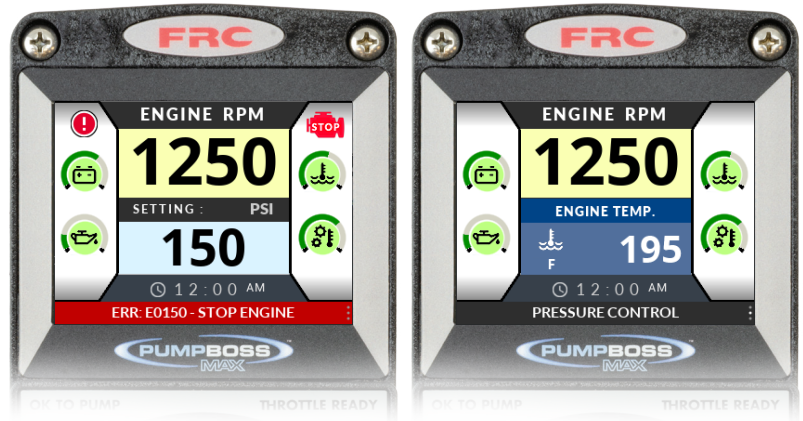
- Easy to navigate Menu for setup
- Programmable preset settings
- Display brightness – able to set threshold/trigger for daytime/nighttime mode
- Ability to sync daytime and nighttime mode with another Safe Fleet device on pump panel
- Adjustable vehicle related parameters, calibrations, warning and alarm values
- Choice of psi, kPa or BAR
- Knob rotation programmable for clockwise (default) or counter-clockwise
- Engine type programmable
- Adjustable engine ramp rate and stability setting
- On-screen diagnostic and troubleshooting
- Software is updated via USB
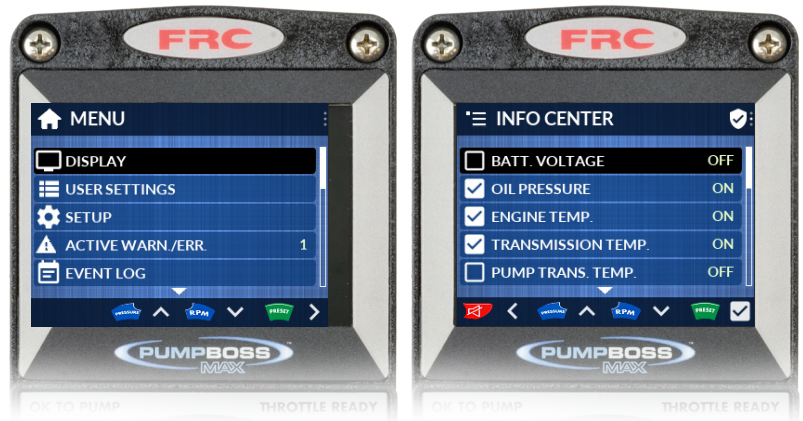
PUMPBOSS MAX™

ORDERING INFORMATION

PUMPBOSS receives engine information via the J1939 or ISO CAN bus.

STANDARD KIT includes control module, pressure sensor(s), and cables.

Kit Numbers	Contact FRC for additional engine types	
Two 600 psi Discharge & Intake Sensors	**One 300 psi Discharge Sensor**	**Description**
PBA500-X0	PBA500-X1	Generic
PBA501-X0	PBA501-X1	Cummins
PBA502-X0	PBA502-X1	Detroit Diesel
PBA504-X0	PBA504-X1	Navistar
PBA505-X0	PBA505-X1	Caterpillar
PBA506-X0	PBA506-X1	Ford *
PBA508-X0	PBA508-X1	Scania
PBA510-X0	PBA510-X1	Mercedes
PBA524-X0	PBA524-X1	MAN
PBA528-X0	PBA528-X1	RAM
PBA529-X0	PBA529-X1	Volvo

* Ford engine 2011 or newer. Requires J1939 Translator Module   X = Type of Engine Control

Dimensions : 3.65" (93 mm) wide 7.42" (188 mm) tall
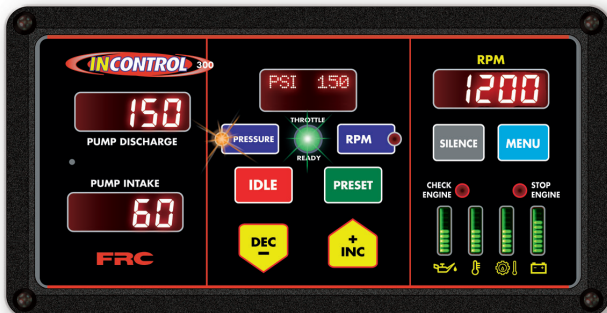
Options : kPa / BAR / °C

INCONTROL 400
Features Knob Control

INCONTROL 300
Features Push Button Control

INCONTROL

ORDERING INFORMATION

INCONTROL receives engine information via the J1939 or ISO CAN bus.

STANDARD KIT includes control module, pressure sensors, audible alarm buzzer, and cables.

Kit Numbers	Contact FRC for additional engine types	
Push Button	**Knob Control**	**Description**
TGA300	TGA400	Generic
TGA301	TGA401	Cummins
TGA302	TGA402	Detroit Diesel
TGA304	TGA404	Navistar
TGA305	TGA405	Caterpillar
TGA306	TGA406	Ford *
TGA308	TGA408	Scania
TGA310	TGA410	Mercedes
TGA324	TGA424	MAN
TGA328	TGA428	RAM
TGA329	TGA429	Volvo

* Ford engine 2011 or newer. Requires J1939 Translator Module

Dimensions : 5.5" (140 mm) high X 10.5" (267 mm) wide
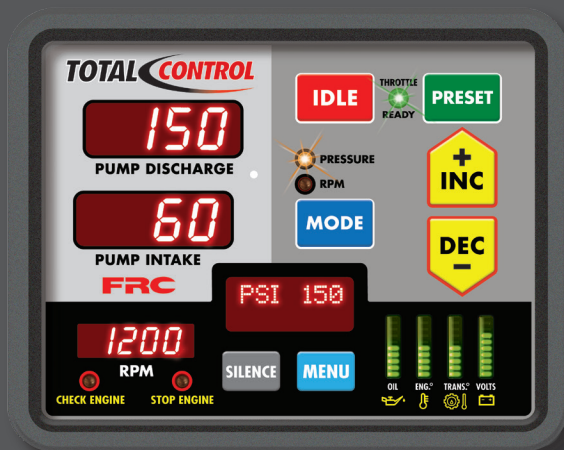
Options : kPa / BAR / °C

TOTAL CONTROL

ORDERING INFORMATION

TOTALCONTROL receives engine information via the J1939 or ISO CAN bus.

STANDARD KIT includes control module, pressure sensors, audible alarm buzzer, and cables.

Kit Numbers	Contact FRC for additional engine types
	Description
TCA100	Generic
TCA101	Cummins
TCA102	Detroit Diesel
TCA104	Navistar
TCA105	Caterpillar
TCA106	Ford*
TCA108	Scania
TCA110	Mercedes
TCA124	MAN
TCA128	RAM
TCA129	Volvo

* Ford engine 2011 or newer. Requires J1939 Translator Module

Dimensions : 6"(153 mm) wide x 7.5" (191 mm) tall

Options : kPa / BAR / °C

PRO-T

ORDERING INFORMATION

PRO-T receives engine information via the J1939 or ISO CAN bus.

STANDARD KIT includes control module, pressure sensors, audible alarm buzzer, and cables.

Kit Numbers	Contact FRC for additional engine types
	Description
PRA300	Generic
PRA301	Cummins
PRA302	Detroit Diesel
PRA304	Navistar
PRA305	Caterpillar
PRA306	Ford *
PRA308	Scania
PRA310	Mercedes
PRA324	MAN
PRA328	RAM
PRA329	Volvo

* Ford engine 2011 or newer. Requires J1939 Translator Module

Dimensions : 5.5" (140 mm) high x 10.5" (267 mm) wide
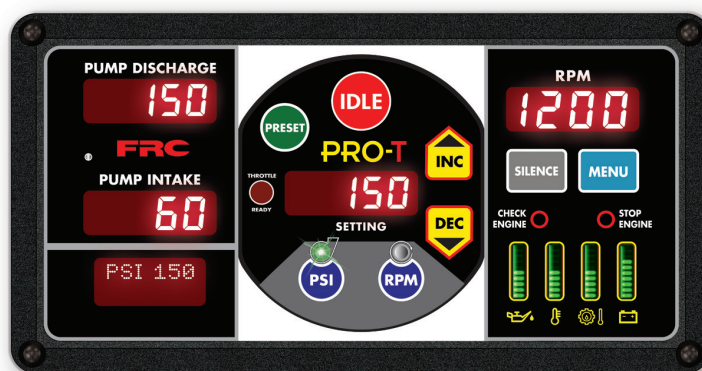
Options : kPa / BAR / °C

**Traditional PRO Governor
Latest Technology**

infinityPRO

THROTTLE

IDLE

infinityPRO **FRC**

FEATURES

- Always Starts From Idle Regardless of Knob Position Which Provides Safer Operation on Start-Up
- Uses Solid State Optical Technology so There are no Mechanical Components to Wear Out
- Knob Rotation Speed Determines Engine Response for Faster and Finer RPM Control
- Red IDLE Button Returns Engine to Idle RPM Quickly
- Operates Only When Safety Interlock is Energized
- FRC Datalink Allows for Multiple Remote Throttles for Added Versatility and Control
- Microprocessor Controlled and Compatible with Most Engines

EXCLUSIVELY FRC

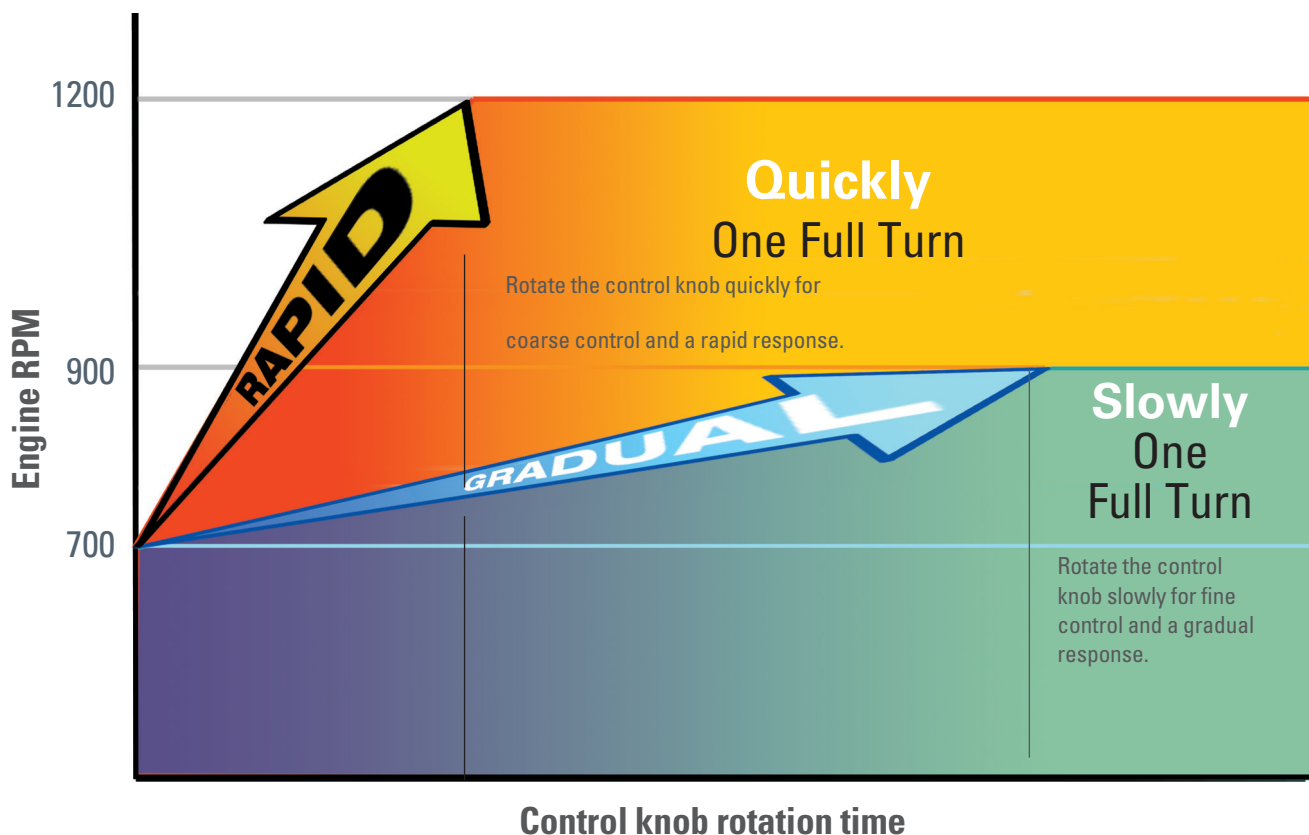Large Knurled Control Knob is easy to operate even with a Gloved Hand

FIELD PROGRAMMING UNIT

The INFINITY-PRO can be programmed for specific engines at the factory or at the time of installation using the field programming unit.

The Next Generation of Remote Electronic Engine Throttles!

The INFINITY series of remote engine throttles are designed with the most advanced technology available. These hand throttles eliminate the potentiometer and electro-mechanical switches used in conventional throttles. INFINITY remote engine throttles use optical technology to determine the speed and direction of control knob movement and to detect when the idle button is pressed.

Engine RPM (y-axis: 700, 900, 1200)

RAPID

Quickly
One Full Turn
Rotate the control knob quickly for coarse control and a rapid response.

GRADUAL

Slowly
One Full Turn
Rotate the control knob slowly for fine control and a gradual response.

Control knob rotation time

ORDERING INFORMATION

Infinity-Pro STANDARD KIT includes hand throttle, identification plate, and cable	
Kit Numbers	Contact FRC for additional engine types
ETA400	Generic
ETA401	Cummins
ETA402	Detroit Diesel
ETA404	Navistar
ETA405	Caterpillar
ETA406	Ford
ETA407	Mack
ETA408	Scania
ETA410	Mercedes
ETA500	Field Programming Unit
INFINITY Throttles are not engine governors and will not automatically compensate for engine load changes.	

THROTTLE**XCEL**

FEATURES

- J1939 or ISO CAN Bus for Engine Information
- Manual or Automatic Control of Engine RPM
- Powers Up at Engine Idle RPM
- Interlock Signal Recognition with Throttle Ready LED
- Return to Engine Idle With the Push of a Button
- Diagnostic Capabilities
- High Idle
- Audible Alarm Buzzer (Optional)
- kPa / BAR (Optional)

EXCLUSIVELY FRC

- Quick response control knob allows faster and more reliable RPM adjustments
- Two line digital message display to clearly show the RPM settings during normal operations, as well as warning alarms and stored data program features
- Bi-color LED bar graphs that provide operators with clear visual engine status
- An additional 4th bi-color LED bar graph specific for transmission temperature
- A built-in day/night sensor adjusts the brightness of the LED display to ensure clear viewing
- Separate buttons for MENU and SILENCE. SILENCE button to deactivate the audible warning alarm
- MENU button to access stored data and program features

ORDERING INFORMATION

THROTTLEXCEL receives engine information via the J1939 or ISO CAN bus.

STANDARD KIT includes control module, and cables.

Kit Numbers	Contact FRC for additional engine types
ELA200	Generic
ELA201	Cummins
ELA202	Detroit Diesel
ELA204	Navistar
ELA205	Caterpillar
ELA206	Ford *
ELA208	Scania
ELA210	Mercedes
ELA224	MAN
ELA228	RAM
ELA229	Volvo

Dimensions :

6.75" (H) x 4.625" (W)

(171.45 mm (H) x 117.48 mm (W))

Options :

Audible Alarm Buzzer

kPa / BAR / °C

TACH P3

FEATURES

- J1939 or ISO CAN Bus for Engine Information
- Digital Engine RPM, Engine Oil Pressure,
- Engine Coolant Temperature and Battery
- Voltage Displays
- Easy to Install, No Panel Cut-Out Needed
- Built-in Diagnostics
- Programmable Audible and Visual Warnings
- Low and Over Voltage Warnings
- Programmable Unit-of-Measure choose psi / kPa / BAR or °F / °C

The Engine Monitoring Display is an all-in-one instrument panel with integrated monitoring and display capabilities that saves valuable pump panel space. It combines four different instruments in one waterproof unit. It provides both audible and visual warning alarms if specified parameters go outside of set limits.

The Engine Monitoring Display as a 4-digit LED display for engine RPM and 3-digit LED displays for engine oil pressure, engine coolant temperature and battery voltage. During normal operation warning messages are displayed as they occur.

EXCLUSIVELY FRC

- A built-in day/night sensor adjusts the brightness of the LED display to ensure clear viewing
- Transmission temperature displayed
- SILENCE button to deactivate the audible warning alarm
- MENU button to access stored data and program features
- Automatically adjusts to 12 or 24 volt system

ORDERING INFORMATION

TACH P3 receives engine information via the J1939 or ISO CAN bus. STANDARD KIT includes display module, audible alarm buzzer, and cables

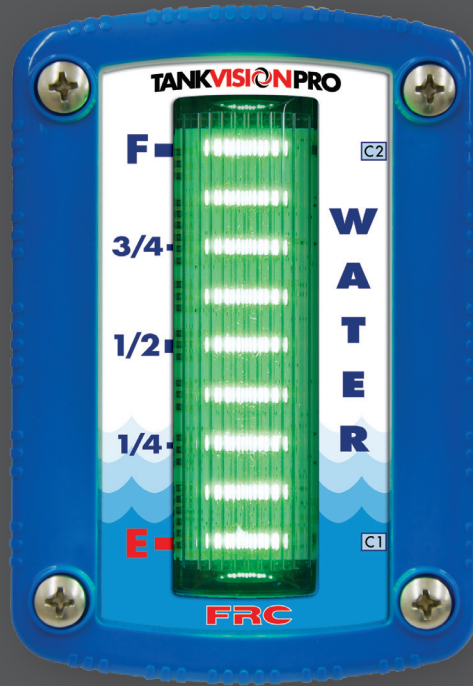| Kit Number	Description
TPA600	TACH P3 Engine Monitoring Display

* Requires J1939 Translator Module for FORD engines

Dimensions :

4.2" (H) x 4.2" (W)

(106.68mm (H) x 106.68mm (W))
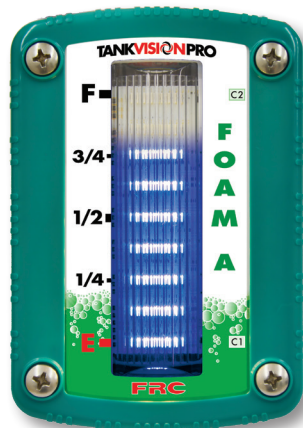
TANKVISION PRO

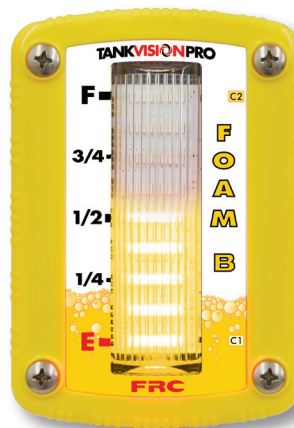
Cab Miniature

PROGRAM • VIEW • KNOW

- The First Programmable Multi-color Tank Level Display
- Highly Visible Ultra-Bright LED's Provide the Most Accurate Display Available
- Wide-Viewing 180° Lens is Easy to See Under All Conditions
- Programmable Brightness Control
- Visual/Audio Warnings for Low Water/Foam Volume
- Self Calibrates to Any Size/Shape Tank Making it Easy to Install and Operate

- Pressure Sensor Monitors Water/Foam Volume Which Means no Tank Probes to Install or Maintain
- Unlimited Remote Displays Including Cab Miniature
- Water/Foam Volume Visible from Multiple Locations
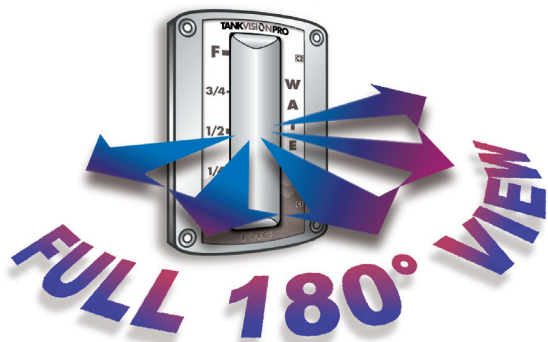
Foam A

Cab Miniature

Foam B

Cab Miniature

ALWAYS KNOW YOUR WATER/FOAM VOLUME ACCURATELY & INSTANTLY
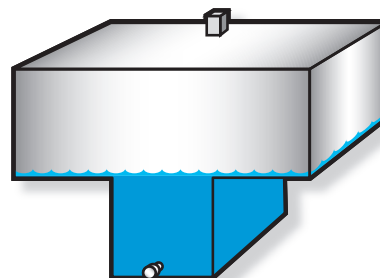
EXCLUSIVELY FRC

DYNAMIC 180° WIDE VIEW LENS

FULL 180° VIEW

HIGHLY VISIBLE ULTRA-BRIGHT LEDS

ACTUAL WATER/FOAM VOLUMES

**CORRECT!**

MISLEADING!

TANKVISION© DISPLAYS **25%** REMAINING

OTHERS DISPLAY **50%** REMAINING

EXCLUSIVELY FRC
SUPPLIED WITH UNIQUE TOP OR SIDE MOUNT FOAM TANK VENTS

For use on sealed foam tanks. The vent is designed to relieve tank pressure at ± 0.01 psi. (With conventional vents relief pressure is ± 1.0 psi.) Vents are self-draining. This stops splashing concentrate from entering the valve cavity and clogging the vent.
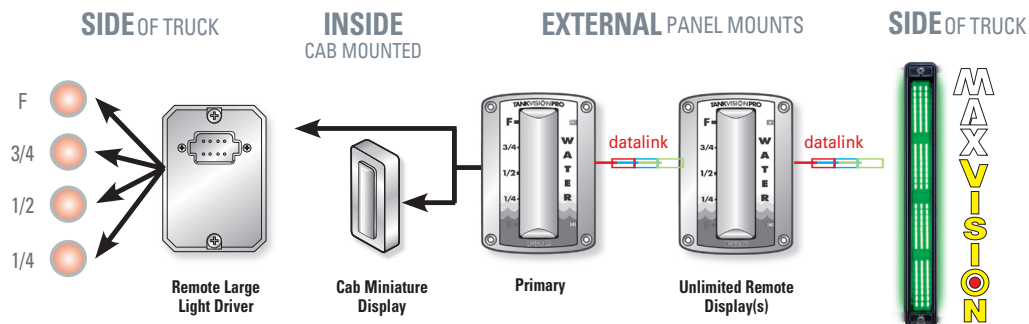

Top Mount

90° Side Mount
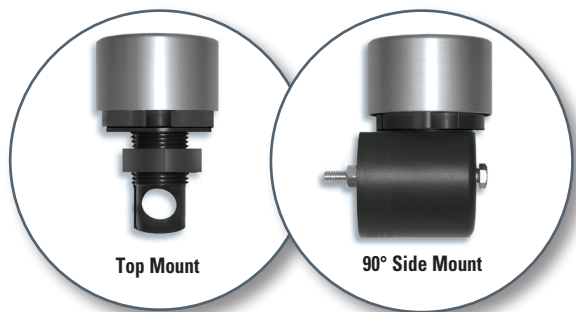
THIN WALL ADAPTER

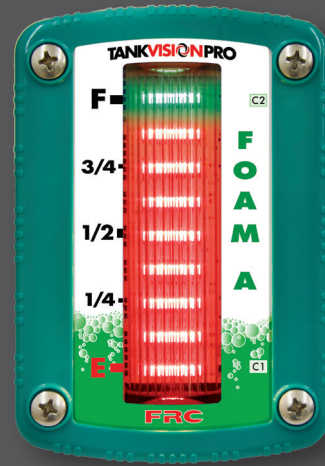For use on tanks where the walls are thin (≤ 3/8"). Shown with pressure sensor mounted.

MULTIPLE DISPLAY OPTIONS
MAXVISION, CAB MINIATURES & REMOTE LIGHT DRIVER

The remote light driver option will power four 60 watt lights or LED light stick to show full, 3/4, 1/2, and 1/4 tank. A miniature display with 5 LEDs is available for mounting inside the cab and multiple TankvisionPro© and MaxVision remote displays can be connected together. All calibration and display information is downloaded from the primary display using the built-in FRC Datalink.

SIDE OF TRUCK

F
3/4
1/2
1/4

Remote Large Light Driver

INSIDE CAB MOUNTED

Cab Miniature Display

EXTERNAL PANEL MOUNTS

datalink

Primary

datalink

Unlimited Remote Display(s)

SIDE OF TRUCK

MAXVISION

PROGRAMMABLE FOR MULTIPLE COLORED LIGHT PATTERNS
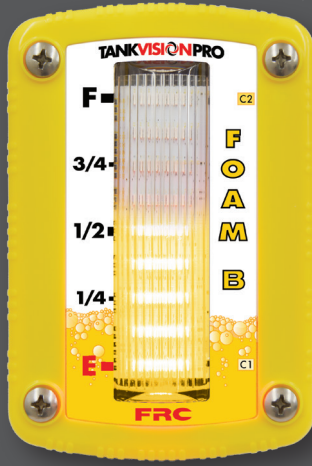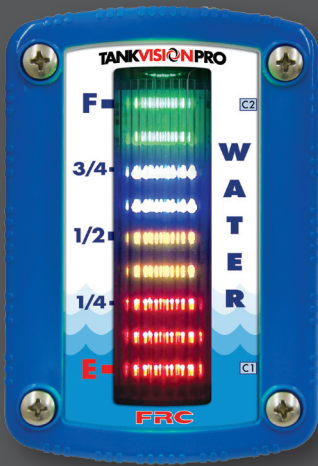
10 SEGMENT LED PERCENTAGE DISPLAY
available for both the WLA300 series and WLA400 series

EXCLUSIVELY FRC
WLA400 Series
with enhanced functions:

- Automatic Electric Valve Control
- Silence Button Input for Audio Warning
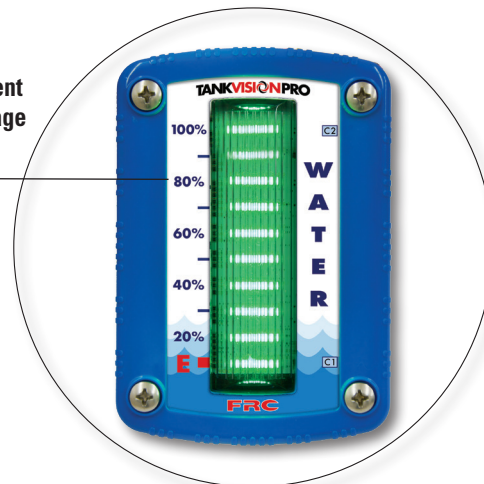- Visual & Audible Warning Output

10 segment percentage display

ORDERING INFORMATION

STANDARD KIT includes; Primary - display module, pressure sensor, and cables   Remote(s) - display module and cables

300 Series	400 Series	Description	Additional Remotes
WLA300-A0	WLA400-A0	Water, Primary, Fractional	WLA205-A Water, Cab Mini
WLA300-A1	WLA400-A1	Water, Primary, Percentage	WLA265-A Foam Class A, Cab Mini
WLA300-B0	WLA400-B0	Water, Remote, Fractional	WLA275-A Foam Class B, Cab Mini
WLA300-B1	WLA400-B1	Water, Remote, Percentage	WLA290-A Driver, Remote Lights
WLA360-A0	WLA460-A0	Foam Class A, Primary, Fractional	
WLA360-A1	WLA460-A1	Foam Class A, Primary, Percentage	
WLA360-B0	WLA460-B0	Foam Class A, Remote, Fractional	
WLA360-B1	WLA460-B1	Foam Class A, Remote, Percentage	
WLA370-A0	WLA470-A0	Foam Class B, Primary, Fractional	
WLA370-A1	WLA470-A1	Foam Class B, Primary, Percentage	
WLA370-B0	WLA470-B0	Foam Class B, Remote, Fractional	
WLA370-B1	WLA470-B1	Foam Class B, Remote, Percentage	

Dimensions:
Standard
4.375"(H) x 3" (W)
(111.13 mm (H) x 76.2mm (W))
Cab Mini
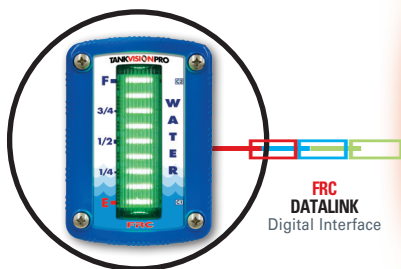2.75"(H) x 1.5"(W)
(69.85mm (H) x 38.1mm (W))

Options:
90° Foam Vent
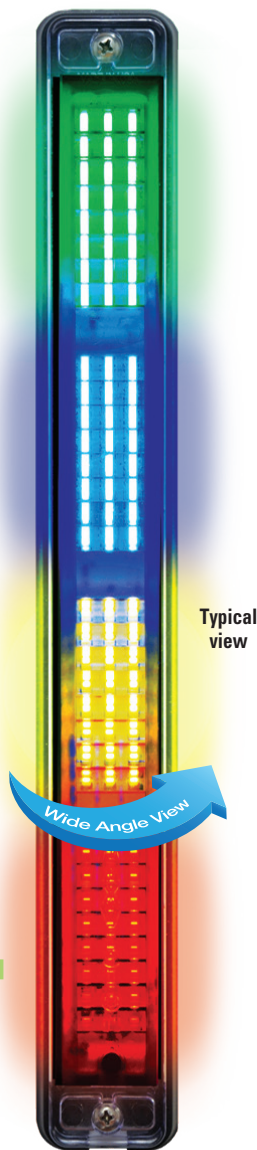Thin Wall Adapter
Calibration Magnet
Audible Alarm Buzzer

MAXVISION

PROGRAMMABLE LED TANK DISPLAY

UP CLOSE OR FAR AWAY, THE PERFECT COMBINATION

Precise as 1/8 Increments

Shown Mounted on Vehicle

Typical view

Wide Angle View

FRC DATALINK Digital Interface

TANKVisionPro® Ultra-bright LED tank display & MaxVision

EXCLUSIVELY FRC

MULTIPLE PROGRAMMABLE VIEW OPTIONS

| FULL | 3/4 | 1/2 | 1/4 |

MAX VIEW COMBINATIONS

FEATURES

- Intense LEDs provide long distance, wide-angle view
- Brightness auto-adjust for clear day or night viewing
- Display changes by 1/8 tank increments
- Works with any FRC TankVision display
- Built-in LED driver provides quicker & easier installation

ORDERING INFORMATION

Kit Numbers	Description	Dimensions:
WLA280-A	MaxVision Programmable LED Tank Display	14.375" (H) x 1.875" (W) x 0.875" (D) (365.13 mm (H) x 47.63 mm (W) x 22.23 mm (D))

INSIGHT

KNOW THE FLOW KNOW THE PRESSURE
HELPS KEEP YOUR NOZZLEMEN SAFER

INSIGHT+

FEATURES
- Easy Calibration from Front of Meter
- Simplifies Installation
- Brightest Readout Possible is Easy to See Under All Conditions
- NFPA Colored Bezels Help Eliminate Mistakes
- FRC Datalink Allows for Remote Displays
- Photo Sensor Detects Ambient Light so the Unit Automatically Adjusts the LED Intensity for Day or Night Operation

NFPA Colors Available on all Meters

INSIGHT

ULTIMATE

EXCLUSIVELY FRC
OPTIONAL BACKLIGHTING
Available on INSIGHT ® Ultimate

INSIGHT

PRESSURE GETS WATER TO THE FIRE, WATER FLOW PUTS FIRES OUT.

Getting the right flow on the fire is critical. Forget using rule-of-thumb based on variables such as pressure readings, hose, size, length and friction loss. Flowmeters give an exact and immediate measure of the water being used.

INSIGHT series displays are specifically designed for use on fire apparatus. These hi-tech indicating devices are compact and built rugged to withstand the conditions found at fire scenes today. INSIGHT displays are used by the largest fire departments in the world and have a proven track record.

EXCLUSIVELY FRC
CALIBRATE UP TO TEN DIFFERENT FLOW RATES

Flowmeters should provide accurate readings at low, medium, and high flow rates. FRC flowmeters have a unique calibration program with the flexibility to ensure accuracy at up to ten different flow rates when plumbing conditions do not allow for non-turbulent flow.
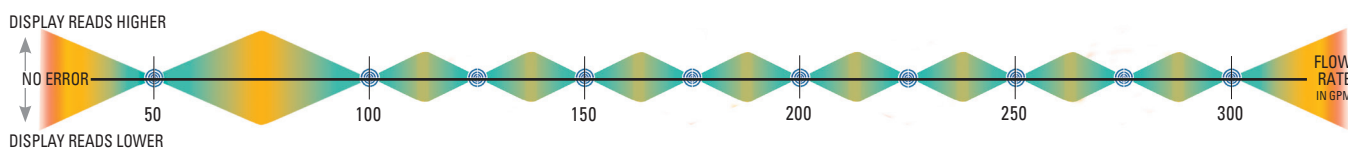
Single Point Calibration
When calibrating at a single flow rate, plumbing conditions may cause turbulent, non-linear flow producing inaccurate readings away from the calibration point.
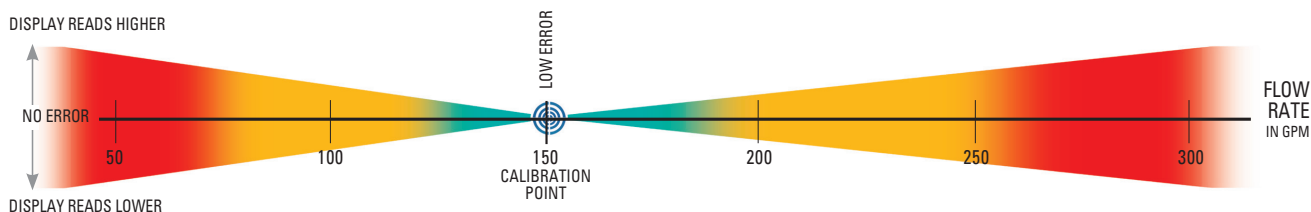
Multiple Point Calibration
When plumbing conditions are not ideal, calibrate at up to TEN flow rates to greatly increase accuracy and reduce measurement errors.

COLOR KEY

CALIBRATION POINT
VERY ACCURATE, low chance of error in the flow rate reading on the display

CLOSE TO THE CALIBRATION POINT
low chance of error in the flow rate reading on the display

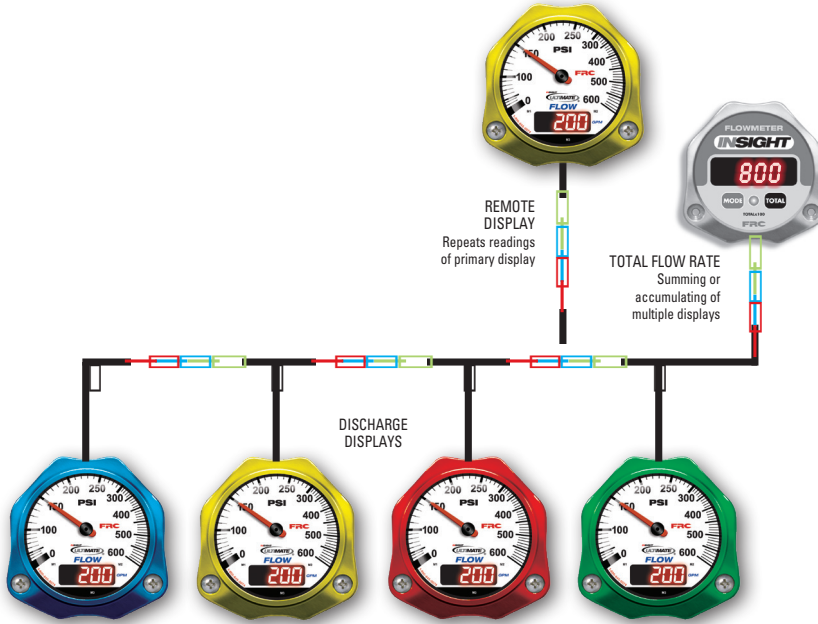**AWAY FROM THE CALIBRATION POINT**
higher chance of error in the flow rate reading on the display

EXCLUSIVELY FRC

EXPANDED 50 psi to 250 psi (3.5 BAR to 17 BAR) SCALE for more precise pressure readings in the most commonly used ranges

REMOTE DISPLAYS, SUMMING AND ACCUMULATING

All FRC INSIGHT series displays are designed to share information over the FRC datalink. This technology allows for remote displays, the display of actual flow rate through multiple discharges (summing) and the total flow through multiple discharges (accumulating).

REMOTE DISPLAY
Repeats readings of primary display

TOTAL FLOW RATE
Summing or accumulating of multiple displays

DISCHARGE DISPLAYS

Color Scheme for Labels on Discharge and Intake Controls
as recommended by NFPA 1901 Table A.16.9.1

Discharge	Color
Preconnect #1 or front bumper jump line	Orange
Preconnect #2	Red
Preconnect #3 or Discharge #1	Yellow
Preconnect #4 or Discharge #2	White
Discharge #3	Blue
Discharge #4	Black
Discharge #5	Green
Deluge/deck gun	Silver
Water tower	Purple
Large diameter hose	Yellow w/White border*
Foam line(s)	Red w/White border*
Booster reel(s)	Grey
Inlets	Burgundy

* FRC does not offer a white border

ORDERING INFORMATION

INSIGHT
STANDARD KIT includes display module, flow sensor w/mount, and cables.

DFA400-XXX	GPM
DFA410-XXX	LPM
DFA400-000	Remote Only

INSIGHT Plus
STANDARD KIT includes display module, flow sensor w/mount, pressure sensor, and cables.

FPA500-XXX	GPM/psi
FPA510-XXX	LPM/kPa
FPA520-XXX	LPM/BAR
FPA500-000	Remote Only

INSIGHT Ultimate
STANDARD KIT includes display module, flow sensor w/mount, pressure sensor, and cables.

FPA400-XXX	GPM/psi
FPA410-XXX	LPM/kPa
FPA420-XXX	LPM/BAR
FPA400-000	Remote Only GPM/psi
FPA410-000	Remote Only LPM/kPa
FPA420-000	Remote Only LPM/BAR

Dimensions:
DFA400 & FPA500
3.25"(H) x 3.25"(W) (82.55 mm x 82.55 mm)
FPA400
4.4"(H) x 4.4"(W) (111.76 mm x 111.76 mm)

Options: Color Coded Bezel
External Totalizer Button (Ultimate Only)
Backlit Display (Ultimate Only)

XXX =	Pipe Diameter (Available diameter varies with mount type.) Flow sensor mount pipe diameters (in inches): 01.0, 01.5, 02.0, 02.5, 03.0, 03.5, 04.0, 05.0, 06.0, 08.0, 12.0

Select a flow sensor mount and add to kit number:
- -SC1   Saddle Clamp   -AL1   Weldment, Aluminum
- -ST1   Weldment, Steel   -PT1   Pipe Tee
- -SS1   Weldment, Stainless   Custom Spacers Available
(Change the 1 to a 2 to order a sensor mount with a flow conditioner.)

EXCLUSIVELY FRC

PADDLEWHEEL FLOW SENSOR

is mounted in the pipe so that only the paddles extend into the flow. The paddlewheel is free spinning, resistant to damage from debris in the water and presents no impedance to flow. The sensor generates electrical pulses that are proportional to the rate of flow. This flow sensor is dependable and virtually maintenance-free.
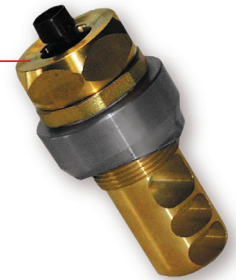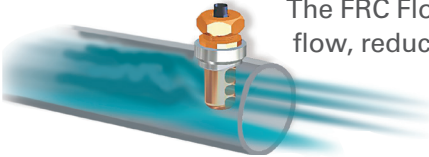

Paddlewheel sensor
Connector
Retainer Cap
Sensor housing
FLOW
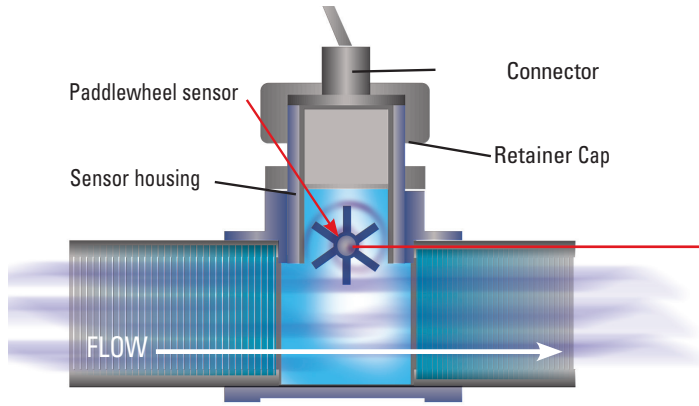
FLOW SENSOR

FLOW CONDITIONER©

Piping can often cause water turbulence, creating inaccurate readings. The FRC Flow Conditioner© is specially designed to straighten water flow, reducing local turbulence for more accurate readings.

Flow Conditioner© improves turbulent flow readings

To achieve best results, choose the proper flow sensor location.

Plumbing that distorts smooth water flow such as elbows, expansions or valves need to be considered when choosing a flow sensor location. Refer to FRC flowmeter manuals for mounting location recommendations.

FLOW SENSOR MOUNTING OPTIONS

A. Saddle Clamps are the standard mountings for 2" (50.8 mm) through 6" (152.4 mm) pipe sizes.
B. Weldment fittings are available in aluminum, steel, and stainless steel.
C. Pipe Tee fittings are NPT threaded, ranging from 1" (25.5 mm) through 4" (101.6 mm) for applications where standard pipe fittings are the easiest solution.
D. Custom Adapters are available for discharge applications where a spacer is the only thing that will fit.

A.

B.

C.

D.
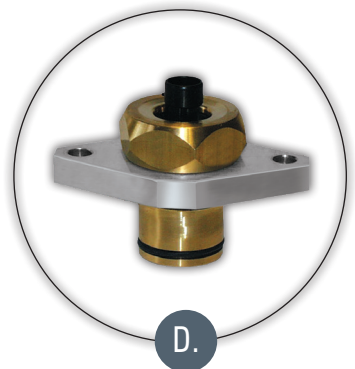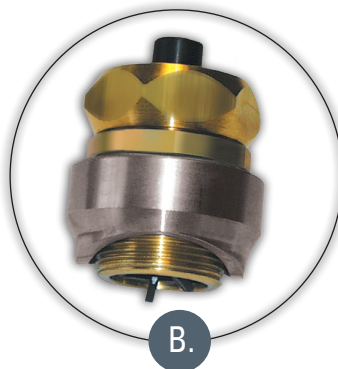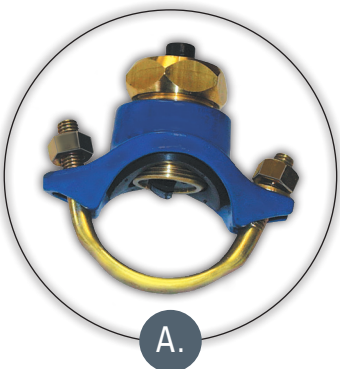
INSIGHT
PORTABLE **FLOWTESTER**

FEATURES

■ Programmable for Multiple Diameter Flow Tubes

■ Use Same Display for Multiple Tubes

■ Calibrate Each Tube Separately to Reduce the Chance of Errors

■ Displays Flow Directly in GPM/LPM

■ Ultra Bright LED Display is Easy to See Under All Conditions

■ Flow Warning and Diagnostic Functions

■ Superior Performance and Accuracy

■ Hydrant Water Supply Testing

Totalizing function on FTA400 models only.

ALL-IN-ONE SELF CONTAINED TESTER

▪ Test pump effectiveness

▪ Calibrate and verify fire suppression equipment

▪ Test hydrant flow

▪ Teach hydraulics in real situations

▪ Shock resistant case with internal cord storage and rechargeable battery (optional padded carry-bag available for flow tube)

Flow tube shown with optional pitot pressure pick-up for reading higher flow rates.

ORDERING INFORMATION

STANDARD KIT includes test set with built-in battery and 120 VAC charger, Flow Tube, Flow Sensor, and Cables

Kit Numbers	Description
FTA400-XXX	GPM
FTA410-XXX	LPM
FTA500-XXX	GPM/psi - This Kit Includes a Pressure Sensor
FTA510-XXX	LPM/kPa - This Kit Includes a Pressure Sensor
FTA520-XXX	LPM/BAR - This Kit Inclues a Pressure Sensor

XXX = Tube Diameter, Standard Flow Tube Diameters (in inches): 01.5, 02.0, 02.5, 03.0, 04.0

Options:
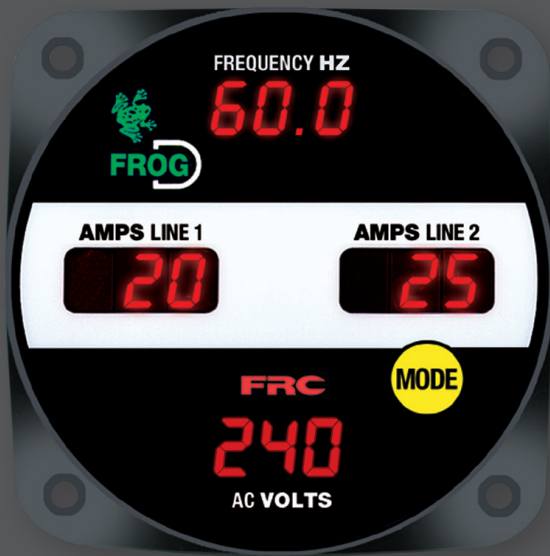Tube Carry Bag • DC Power Cable • Pitot Tube • International AC Power Cord • 240 VAC Charger Couplings available vary with flow tube diameters

		w/flow sensor	
Tube Diameter	Standard Coupling	GPM	LPM
1.5	2.5	13-320	50-1210
2	2.5	21-520	80-1970
2.5	2.5	30-850	115-3220
3	MNPT	40-1380	150-5225
4	MNPT	80-2300	305-8705

FROG-D
SINGLE PHASE GENERATOR DISPLAY

FEATURES
- Displays Frequency, Voltage, and Current
- Ideal for Hydraulic, Diesel Powered, and PTO Generators
- Rated for 50/60 Hz Generators from 6 to 45 kW
- Highly Visible Ultra-Bright LEDs
- MODE Button Displays Total Generator Hrs. and Hydraulic Oil Temp.
- Built-in Warning for Current Overloads, Voltage Fluctuations, and High Hydraulic Oil Temperature
- Optional Hydraulic Oil Temperature Sensor and Audible Alarm Buzzer

The three phase signal interface module is mounted close to the current sensors and voltage transformers so that cable runs are short.

Current and voltage information is passed to the display module over a two-wire datalink.

FROG-D
THREE PHASE GENERATOR DISPLAY

FEATURES
- Displays Frequency, Line Voltage (Phase to Neutral or Phase to Phase), and Current on Each Line
- Monitor Each Line Individually or Scan All Lines Continuously
- Rated for 50/60 Hz Generators from 10 to 135 kW
- Generator Hourmeter
- Built-in Warning for Current Overloads, Voltage Fluctuations, and High Hydraulic Oil Temperature
- Optional Hydraulic Oil Temperature Sensor and Audible Alarm

ORDERING INFORMATION

STANDARD KIT includes;

Single Phase - display module, 2 current sensors, AC voltage transformer, and cables.

Three Phase - display module, signal interface module, 3 current sensors, 3 AC voltage transformers, & cables.

Kit Numbers	Description
FDA100-XXX	Frog-D, Single Phase
FDA700-XXX	Frog-D, Three Phase, Delta Windings
FDA710-XXX	Frog-D, Three Phase, Star Windings

XXX = Generator Power Rating in Kilowatts.
- Single Phase rated 6 to 45 kW • Three Phase rated 10 to 135 kW

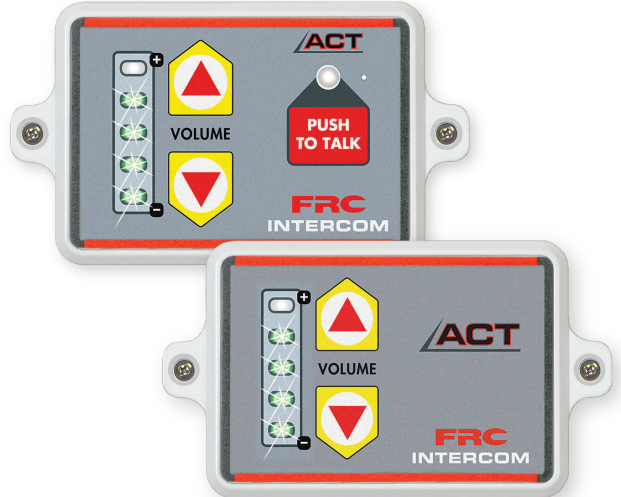Dimensions :
4.25" (H) x 4.25"(W)   (108 mm (H) x 108 mm (W))
Interface Module - 3.8" x 5.9" x 1.9" (97 mm x 150 mm x 48 mm)
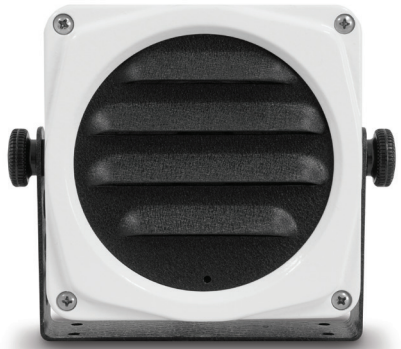
Options :
Audible Alarm Buzzer, Hydraulic Oil Temperature Sensor

ACT
Always Clear Talking

ICA900 • ICA910

5.125" x 2.875" (130 mm x 73 mm)
(w/o Mounting Bracket)

5.125" x 5.125" (130 mm x 130 mm)
(w/o Mounting Bracket)

FEATURES
- Superior Noise Reduction
- Background Noise Monitoring Circuit to Detect and Suppress Excessive Noise Produced by the Engine and Pump
- Clear, Crisp and Loud Sound for Accurate and Precise Communication
- Superior Fireground Intercom has a Rugged Design to Meet the Different Mounting Requirements and the Demanded Reliability

SYSTEM OPTIONS
Handheld Microphone
This option is for installation in high noise areas. The microphone quickly plugs into the master station box. The system can be keyed to transmit with the microphone switch or the PTT button.

Remote Station with PTT (Push-To-Talk) Button
This option is for installations where a remote station with hands-free operation is not required. The PTT button must be pressed for the remote station to transmit.

ICA900 SYSTEM FEATURES
Master station comes with Push-to-Talk (PTT) and volume control buttons Standard 2-way and 3-way communication:

- 2-way communication available with remote station hands-free or PTT
- 3-way communication available with one remote station hands-free and one remote station PTT or two remote stations PTT

Versatile Mounting Options:
- Separate control module and speaker box
- Speaker box can be mounted at remote location when space is limited
- Choice of surface or bracket mount

ORDERING INFORMATION

STANDARD KIT includes : 2 or 3 Stations, Fused Power Input, and Cables.

Kit Numbers	Description
ICA100	2-Station, Interior
ICA200	2-Station, Surface Mount
ICA300	3-Station, Surface Mount
ICA400	2-Station, Flush Mount
ICA500	3-Station, Flush Mount
All Master B or Remote stations for above kits are available as surface or flush mount.	
ICA900	2-or 3-Station
ICA910	2-or 3-Station, Aerial Applications

Options:
- Hand-Held Microphone and Jack on Master (A) Station
- Hand-Held Microphone and Jack on Master (B) Station
- Push-To-Talk Button on Remote Station (2-Way systems only)
- Additional Speaker (2-Way systems only)

FRC Intercoms meet the demanding needs of rescue and fire service personnel for two or three-way communication.

5.25" x 4" x 1.5"
(132 mm x 102 mm x 38 mm)

4.25" x 3.25" x 1.5"
(108 mm x 83 mm x 38 mm)

ICA100

INTERIOR Intercom System for Ambulances and Rescue Vehicles

Master station shown with hands free remote

ICA200 • ICA300
SURFACE MOUNT
Intercom System for Indoor/Outdoor Use

Master station with volume knob and PTT button.

Shown with hands free remote.

8.25" x 5.625" x 3"
(210 mm x 443 mm x 76 mm)
(w/o Mounting Bracket)

5.25" x 5.25" x 2.25"
(132 mm x 132 mm x 57 mm)
(w/o Mounting Bracket)

6.25" x 7.25"
(159 mm x 184 mm)
(panel dimensions)

5.625" x 6"
(144 mm x 153 mm)
(panel dimensions)

ICA400 • ICA500
FLUSH MOUNT
Intercom System for Indoor/Outdoor Use

Master station with volume knob and PTT button.

Shown with hands free remote.

FRC Basic Two-Way Systems

The basic two-way intercom system includes a master station with volume and Push-to-Talk (PTT) controls and a remote station that provides hands-free operation. The remote station is always in transmit mode unless interrupted by a transmission from the master station.

FRC Basic Three-Way Systems

The basic three-way intercom system includes two master stations (A and B) with volume and PTT controls and a remote station that provides hands-free operation. The remote station is always in transmit mode unless interrupted by a transmission from a master station. Master station A has transmit priority over the two other stations.

MANSAVER™ BARS
PUT YOUR PUMP OPERATOR BEHIND BARS
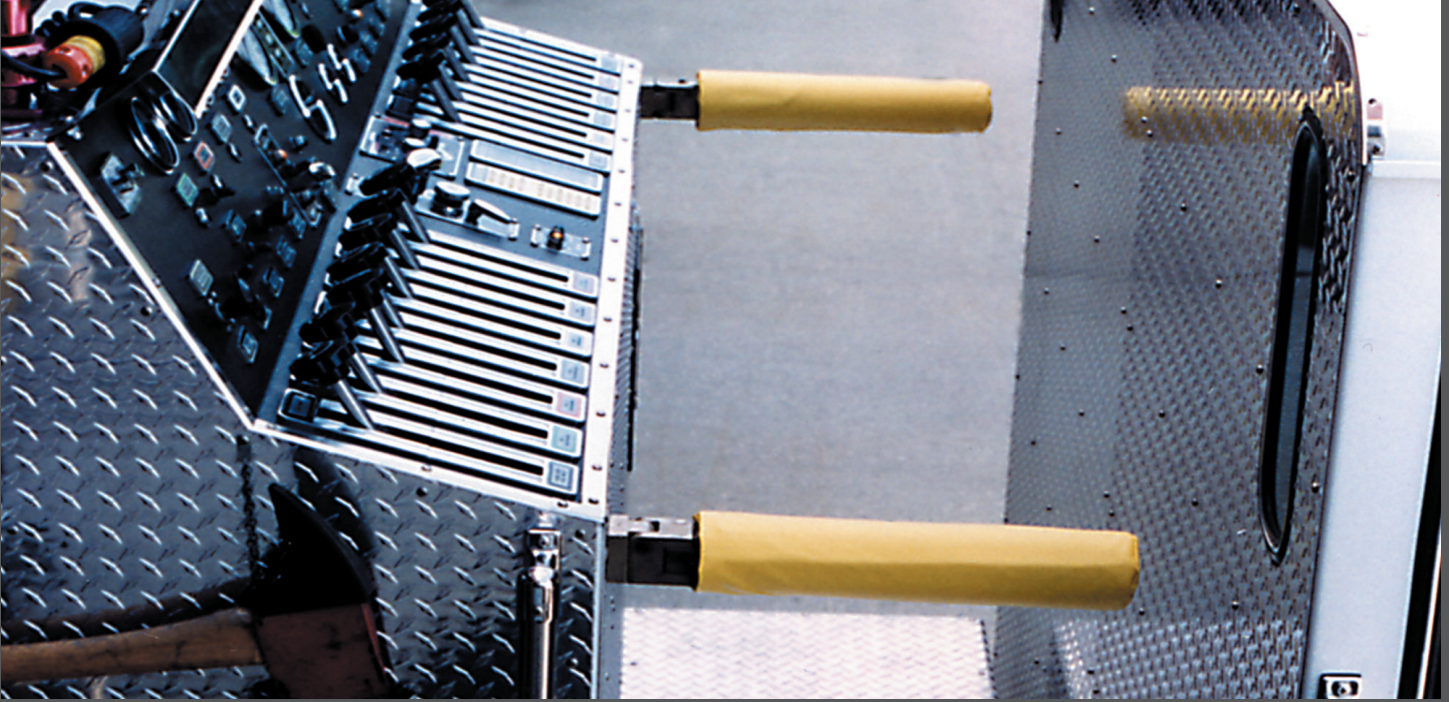
GIVE YOUR FIREFIGHTERS MAXIMUM SAFETY USING THE MANSAVER

■ The ManSaver is a safety bar that mounts across the opening on walk-through pumpers. This innovative device will help prevent a fall from a walk-through.

■ The ManSaver is spring loaded so that it always returns to a horizontal position. There are no hooks to latch or harnesses to buckle. This clever design helps ensure that the walk-through will always be protected as firefighters do not waste time closing or latching anything behind them. To enter, push the ManSaver in or up. To exit, simply lift it.

■ The ManSaver is made of aluminum extrusion and aluminum bronze castings thereby making it rust proof. It is covered with a heavy layer of foam and a tough rip-stop vinyl outer covering to protect against injuries. Available in even sizes from 14 to 36 inches. Standard bar is provided with bright yellow vinyl cover, red is available upon request.

■ The ManSaver must be attached to a strong surface or sturdy support. Each bar is supplied with dependable, heavy-duty, grade-8 mounting bolts.

Two bars are required for applications shown on this page.

Mansaver bars are ideal for Aerial Turntables.

Patented

AERIAL BAR

Use the Aerial bar at the end of the ladder across from the opening to the bucket. Like the standard ManSaver, it is spring loaded so an operator doesn't have to remember to close or latch it.

The aerial bar is a variation on the standard ManSaver. This bar has a stainless steel U-shaped tube welded to it to cover more area and to help prevent a person from slipping underneath the bar. Designed for use at the top of an aerial device, at the back of the "bucket" where the ladder leads down to the elevated turntable.
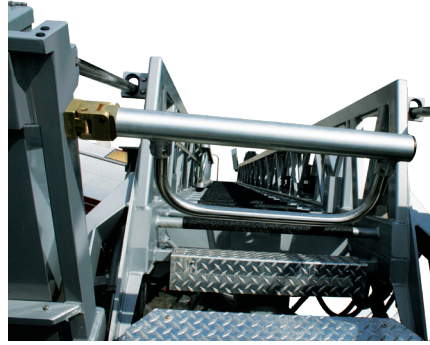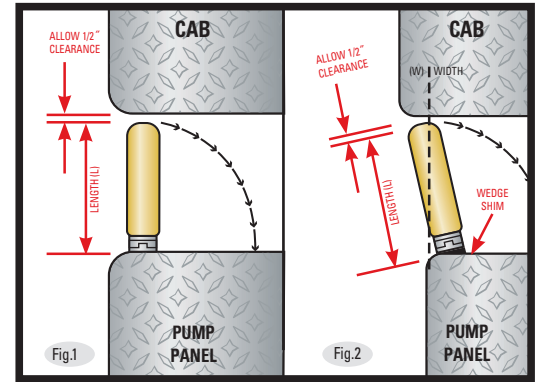
- Opens in two directions (up and in)
- Available in two standard sizes of 24" and 26"
- Stainless loop welded under the bar provides added safety
- Spring loaded to always return to a closed position.
- 4 grade-8 mounting bolts are provided
- All aluminum extrusion and aluminum bronze castings- cannot rust

AERIAL BAR MOUNTING

The standard bar mounts on the left as you enter the basket from the ladder. If this mount will interfere with a control panel in the basket, an aerial bar that mounts on the opposite side is available. The bar has a 6" or 10" stainless loop welded to an unpadded ManSaver.

BENCH SEAT BAR

Use the bar as an armrest or at the end of a bench seat.

- Opens vertically up and down
- Covered with a heavy layer of foam and a tough rip-stop vinyl outer covering
- Option to pin in upright position
- Standard bar is provided with a grey cover, other colors are available.

BENCH SEAT MOUNTING

The bench seat bar is normally mounted by the ambulance manufacturer. FRC works closely with these body builders and can supply the bar with matching vinyl as required. Otherwise, the bar mounts just as the standard ManSaver™.

ORDERING INFORMATION

STANDARD KIT includes one bar and mounting hardware	
Kit Numbers	**Description**
MSA110-AXX	ManSaver Bar
MSA120-AXX	Platform Bar
	Bar w/o Pad & Cover
MSA300-AXX	Bench Seat Bar
MSA406-AXX	Aerial Bar with 6" loop
MSA410-AXX	Aerial Bar with 10" loop

XX = Length (in inches)
ManSaver/Platform length: 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36"
Bench Seat Bar: 16, 18, 20, 22, 24"
Aerial Bar: 24, 26"
Options : Cover Color • Decal Upright Pin • Rail Bracket

HOW TO MOUNT AT AN ANGLE

- Measure the distance between mounting surface and opposite surface to obtain dimension L (see Fig. 1). Be sure to leave at least 1/2" clearance.
- Measure the offset (how much wider one surface is than the other) to obtain W (see Fig. 2)
- Use the wedge shim selection chart.

WEDGE SHIM SELECTION CHART

		Wedge Shim Type			
		A	**B**	**C**	**D**
	18	2	3	4 1/2	6
	20	2	3 1/2	5	7
	22	2	4	6	7 1/2
MANSAVER BAR Length (L) inches	24	2	4	6	8
	26	2 1/2	4 1/2	6 1/2	9
	28	2 1/2	5	7	9 1/2
	30	2 1/2	5	7 1/2	10
	32	3	5 1/2	8	11
	34	3	6	9	11 1/2
		Offset Width (W) inches			

How to use the chart
(for example, assume L=26", W=7")

- Select the length (L=26") of the ManSaver bar.
- Read across the chart horizontally, select the width (W) on the chart that is equal to or less than the actual width measured and choose the corresponding shim type (In our example the closest value is 6 1/2" , so the wedge shim required is Type C as shown by the shaded area on the chart.)

SAFER SEARCH
MAKE YOUR SEARCH SAFER

The Safer Search System is simple to deploy, improves search accountability for team members, and makes large difficult area searches more manageable and safer for all firefighters.

SAFER SEARCH SYSTEM LETS YOU KNOW:

■ Exactly How Far You Have Advanced Into the Search Area

■ Exactly Which Direction to Go and How Far It Is to Get Out

■ Tag Lines Allow You to Sweep the Search Area Systematically

■ Entire System is Contained in a Heat Resistant Vinyl Bag with Distance and Direction Markers

ORDERING INFORMATION

Device and Marker Kit
Includes Safer Search Device, Direction and Distance Markers to fit on 1/4 to 5/16 inch rope (6 to 8mm)

SDA100-A20	Markers for 200 feet (60.96 meters) of rope
SDA100-A30	Markers for 300 feet (91.44 meters) of rope
SDA100-A40	Markers for 400 feet (121.92 meters) of rope

Standard Kit
Includes Bag, Safer Search Device, Direction and Distance Markers installed on rope, and two tag lines.

|	
SDA200-A20	200 feet (60.96 meters) of rope with standard tag lines
SDA200-A30	300 feet (91.44 meters) of rope with standard tag lines
SDA200-A40	400 feet (121.92 meters) of rope with standard tag lines
SDA200-B20	200 feet (60.96 meters) of rope with retractable tag lines
SDA200-B30	300 feet (91.44 meters) of rope with retractable tag lines
SDA200-B40	400 feet (121.92 meters) of rope with retractable tag lines

A system with 200 feet (60.96 meters) of rope, a safer search device, and markers will weigh 11.5 lbs. and measure 15" x 12" x 7" (381mm x 304.8 mm x 177.8 mm).
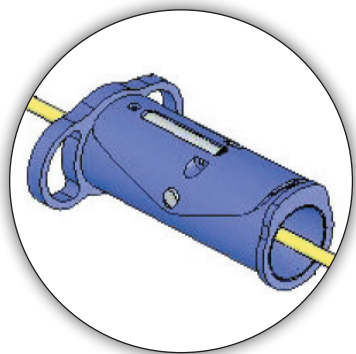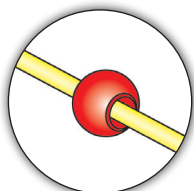
Safer Search Device

- Easily slides along the search rope
- Automatically locks in place at the Lock/Direction Markers
- Unlocking lever is simple to use with a gloved hand
- Large attachment loops are useful for tag lines, for multiple rope operations, or when connecting to a tie off point
- Made of anodized machined 6061-T6 aluminum
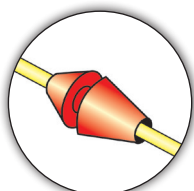
Lock/Direction Marker

- The lock/directional marker is set on the search rope every 25 feet
- The Safer Search Device automatically locks on this marker so firefighters know when to stop, assess conditions, communicate findings, and feel for the appropriate distance markers
- The position and shape of this marker shows the direction toward the egress/entry point or into the search area

Ball Distance Marker

- The ball markers indicate 25 feet (7.62 meters)
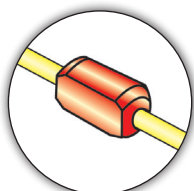
Elliptical Distance Marker

- The elliptical markers indicate 100 feet (30.48 meters)

25'
(7.62 m)

50'
(15.24 m)

75'
(22.86 m)

175'
(53.34 m)

200'
(60.96)

250'
(76.2 m)

PMI Rapid Search Line II

- The Safer Search Device System is supplied with PMI Rapid search line. Made of high tenacity nylon with a kevlar interior core

Stuff-Bag

- 3 sizes available to hold 200, 300, or 400 feet (60.96, 91.44, or 121.92 meters)of rope
- Two side pockets to store tag lines
- Adjustable shoulder strap
- Velcro™ closures

Made of 22 oz. rip stop vinyl, this bag holds everything you need to begin search operations
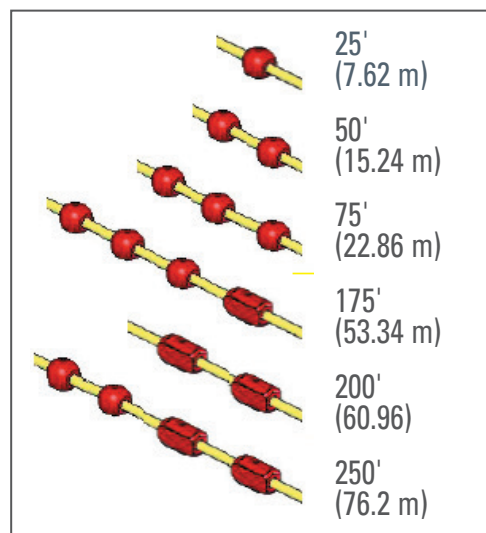
EXCLUSIVELY FRC

SKULLSAVER®

Protect firefighters from the hazard of protruding ground ladder ends at the rear of your apparatus.

Ground ladder ends that protrude from the rear of the apparatus are often the cause of nasty head bumps. A SkullSaver ground ladder end cover can help reduce injury caused by this type of accident. The thickly padded inner lining and bright yellow outer shell combine to create a safer environment for firefighting personnel.

- Outer Shell is Waterproof and Mildew Resistant
- Reinforced "Rip-Stop" Vinyl
- Inner Lining is Padded Heavy Duty 10 oz. Canvas
- Two Velcro® Straps Hold SkullSavers in Place
- Highly Reflective Lettering or American Flag Design

ORDERING INFORMATION

Kit Numbers	Description
SSA100-AXX	American Flag (not available in 22 inch)
SSA200-AXX	Keep Back
SSA300-A00	Single Leg (4 inch)
XX = Size in Inches	
Standard Sizes: 22, 23, 25, 27 (the width of the ladder)	
Options: Horizontal Format • Red Vinyl • Custom Sizes	

HORIZONTAL IN RED   CLASSIC

JACKSTRAP
©FRC PAT. PENDING

Be Safer & Secure.

FRC Jackstrap helps secure hose to apparatus to help prevent unwanted laydowns

The Jackstrap is a safety device that has been developed by FRC to help prevent fire hose from inadvertently coming off the apparatus while responding to, or returning from an incident.

It is made of heavy-duty 2˝ wide polypropylene webbing. The adjustable hose loop will fit on supply and working hose from 1-1/2 to 5 inches. A separate shoulder loop will help the firefighter when pulling a supply line or help support a working hand line. When used on a hydrant line, the shoulder loop can firmly hold the hose to the hydrant during a hose stretch. A side pocket on the shoulder loop securely holds a hydrant tool close at hand.

HELPS SECURE HOSE
TO HYDRANT
WHEN LAYING HOSE

HELPS SECURE HOSE
FOR CARRYING
DURING LIMITED MANPOWER OPERATIONS

ORDERING INFORMATION

Kit Numbers	Description
JSA100	Jackstrap

PUMP

Intake Pressure

Model Number:	XE-IO3100PT3-S
Pressure Range:	Absolute to 600 psi (40 BAR)
Proof Pressure:	1200 psi (83 BAR)
Excitation Voltage:	5 VDC
Output Voltage:	0.5 to 4.75 VDC
Thread Size:	1/4-18 NPT

Discharge Pressure

Model Number:	XE-FP4000PT3-S
Pressure Range:	0 to 600 psi (0 to 40 BAR)
Proof Pressure:	1200 psi (83 BAR)
Excitation Voltage:	5 VDC
Output Voltage:	0.5 to 4.75 VDC
Thread Size:	1/4-18 NPT

Model Number:	XE-PRO31PT3-S
Pressure Range:	0 to 300 psi (0 to 20 BAR)
Proof Pressure:	800 psi (55 BAR)
Excitation Voltage:	5 VDC
Output Voltage:	0.5 to 4.75 VDC
Thread Size:	1/4-18 NPT

typical pressure sensor

Tank Pressure

Model Number:	XE-WLPT4-S
Pressure Range:	0 to 5 psi (0 to .35 BAR)
Excitation Voltage:	5 VDC
Output Voltage:	0.5 to 4.5 VDC
Thread Size:	1/4-18 NPT

Pump Overheat

Model Number:	XE-TPQ1-S
Contact Temperature:	130° F (55° C)
Reset Temperature:	115° F (46° C)

FLOW

Paddlewheel Flow Sensor

Model Numbers:	XE-MF10P-S
	XE-MF15P-S (shown)
Flow Velocity Range:	1.5 to 55 ft/sec
Output Signal:	5 VDC Square Wave
Output Frequency:	1.25 to 1.50 Hz/ft/sec (nominal)
Maximum Pressure:	600 psi (40 BAR)

ALARM

Audible Alarm (Buzzer)

Model Number:	XE-FDBZ-A
Voltage:	12 VDC
Volume:	95 dB
Diameter:	1-3/4" (45 mm)
Mounting Hole:	1-1/8" (29 mm)

ENGINE

Engine Oil Pressure

Model Number:	XE-TPP1-S
Pressure Range:	0 to 100 psi (0 to 7 BAR)
Thread Size:	1/8 NPTF
Static Resistance:	240 to 33 Ohms

Engine Coolant Temperature

Model Number:	XE-TPW1-S
Temperature Range:	100 to 250° F (38° C x 121° C)
Thread Size:	1/2-14 NPT

Model Number:	XE-TPW2-S
Temperature Range:	50° to 300°F (10° C x 149° C)
Thread Size:	5/8-18 UNF
Adapter Size:	16 mm - 1.5
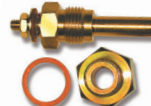
Model Number:	XE-TPW3-S
Temperature Range:	50° to 300° F (10° to 149° C)
Thread Size:	5/8-18 UNF
(insulated ground)	

Transmission Temperature

Model Number:	XE-TPT1-S
Temperature Range:	140° to 320° F (60° to 160° C)
Thread Size:	1/8 NPTF
Static Resistance:	240 - 33 Ohms

GENERATOR

Hydraulic Oil Temperature

Model Number:	XE-FDT2-S
Temperature Range:	-40° to 230° F (-40° to 110° C)
Thread Size:	1/8-27 NPT
Input Voltage:	12 VDC
Output Voltage:	10mv/°F (1v at 100° F (38° C))

Current Sensors

Model Number:	XE-FDCT1-S
Ratio:	150:5

Model Number:	XE-FDCT2-S
Ratio:	300:5

Model Number:	XE-FDCT3-S
Ratio:	400:5

Model Number:	XE-FRCT4-S
Ratio:	200:5

AC Transformer

Model Number:	XE-FDVT1-S
Input Voltage:	120/240 VAC
Output Voltage:	12/24 VAC
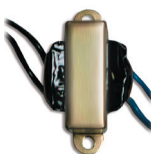
Generator Engaged Detecting Circuit

Model Number:	XE-TPG1-S
Input Voltage:	120/240 VAC
Output Voltage:	12 VDC
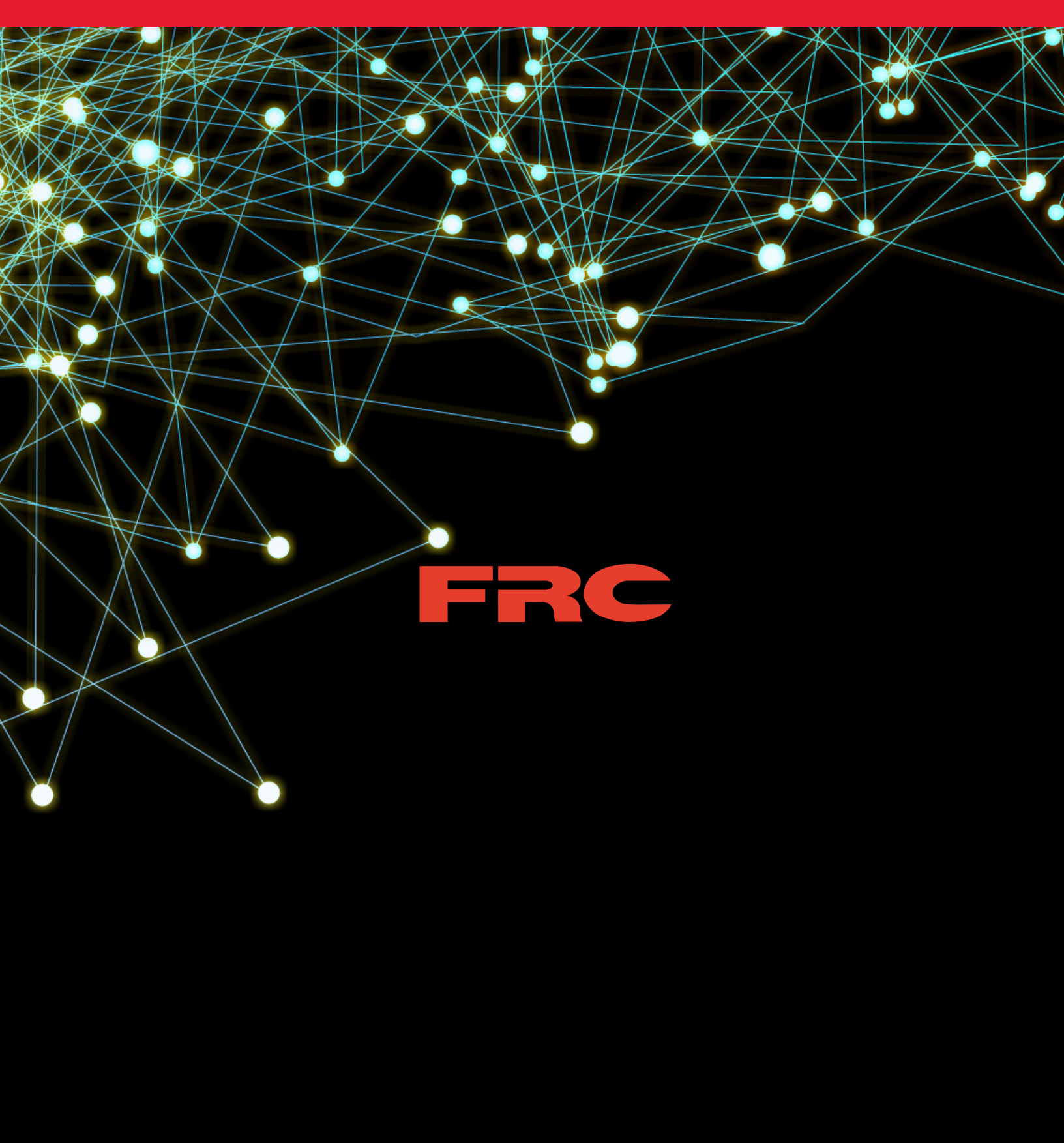
FRC

www.fireresearch.com
+1 631.724.8888
frc.sales@safefleet.net

SAFE **SF** FLEET
Driving Safety Forward™