Control & Safety Solutions

INSTRUMENTS | CONTROLS | DISPLAYS | ACCESSORIES

FRC
A Safe Fleet Brand
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FRC GOVERNORS
PROVIDE SAFER PUMP OPERATION

PROPER OPERATING PRESSURE

PRESSURE IS ABOVE 45 PSI WITH INCONSISTENT FLOW OR AIR IN THE LINE

PRESSURE IS BETWEEN 15 AND 45 PSI

PRESSURE IS LOWER THAN 15 PSI

RPM LIMIT MODE
Pressure above 45 PSI

LOW WATER CYCLE
Engine Limited to 1100 RPM

NO WATER MODE
Engine Goes to IDLE
NO SUPPLY WATER

If the discharge pressure is below 15 PSI, 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 the governor enters the low water cycle. If the discharge pressure does not rise above 15 PSI within 3 minutes, the governor switches to idle mode and cancels the pressure setting.

Message Display Flashes NO WATER

LOW WATER CYCLE

If the discharge pressure is between 15 and 45 PSI, the engine is set at 1100 RPM. If the pressure does not rise above 45 PSI 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 and 45 PSI. When the pressure rises above 45 PSI the governor resumes normal operation.

Message Display Flashes LO WATER

RPM LIMIT MODE

If the discharge pressure stays above 45 PSI, 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 cancelled. When the pressure comes back to the selected pressure setting, the RPM limit mode is cancelled and the governor switches to normal operation.

Message Display Flashes OPERATOR/RPM LIMIT

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.

• 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
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 the ease of selecting either mode of operation
Available on PumpBoss, ProT, and INControl

Digital Master Pressure Display
for pump discharge and intake
Available on Total Control, INControl and ProT

Throttle-Ready LED is on when the required interlock conditions are met and the governor begins pump operations
Bi-colored LED bar graphs provides operator with clear visual engine status
GREEN - normal
RED - fault / warning

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 & Stop Engine LEDs repeat engine warnings from the cab

An additional bi-color LED bar graph specific for transmission temperature

UNIVERSAL GOVERNOR FEATURES

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 is used to access detailed information and program features

Built-in Day/Night Sensor adjusts the brightness of the LED displays to ensure clear day/night viewing
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 are stored with date and time stamp, easy to retrieve for diagnostics and maintenance

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 all standard NFPA recommendations

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

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

Maximum Pressure Setting
High pressure pumps and sensors require higher settings

Knob Rotation
Available in counter-clockwise rotations

Remote Activation
Typically used with ARFF apparatus
### INCONTROL 300

**Features**
- Push Button Control

**ORDERING INFORMATION**

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

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

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Push Knob Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One 300 PSI</td>
<td>Two 600 PSI</td>
</tr>
<tr>
<td>Discharge</td>
<td>Discharge &amp; Intake</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Sensors</th>
<th>Description</th>
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<tbody>
<tr>
<td>TGA200</td>
<td>PBA400</td>
<td>Generic</td>
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<tr>
<td>TGA201</td>
<td>PBA401</td>
<td>Cummins IS</td>
</tr>
<tr>
<td>TGA202</td>
<td>PBA402</td>
<td>Detroit Diesel</td>
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<td>TGA206</td>
<td>PBA406</td>
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<tr>
<td>TGA216</td>
<td>PBA416</td>
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</tr>
<tr>
<td>TGA224</td>
<td>PBA424</td>
<td>MAN</td>
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</tbody>
</table>

* Ford engine 2011 or newer. Requires J1939 Translator Module

**Dimensions:** 5.5” (H) x 10.5” (W)

**Options:** Audible Alarm Buzzer • kPa / Bar / °C

### INCONTROL 400

**Features**
- Knob Control

**ORDERING INFORMATION**

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

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

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Knob Control Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One 300 PSI</td>
<td>Two 600 PSI</td>
</tr>
<tr>
<td>Discharge</td>
<td>Discharge &amp; Intake</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Sensors</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>PBA200</td>
<td>PBA400</td>
<td>Generic</td>
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<td>PBA201</td>
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<tr>
<td>PBA206</td>
<td>PBA406</td>
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<tr>
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<td>PBA216</td>
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<tr>
<td>PBA224</td>
<td>PBA424</td>
<td>MAN</td>
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</tbody>
</table>

* Ford engine 2011 or newer. Requires J1939 Translator Module

**Dimensions:** 6.75” (H) x 4.625” (W)

**Options:** Audible Alarm Buzzer • kPa / Bar / °C

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**PUMPBOSS**

**Features**
- Knob Control

**ORDERING INFORMATION**

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

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

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Knob Control Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One 300 PSI</td>
<td>Two 600 PSI</td>
</tr>
<tr>
<td>Discharge</td>
<td>Discharge &amp; Intake</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
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<th>Description</th>
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<tr>
<td>PBA200</td>
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<td>PBA224</td>
<td>PBA424</td>
<td>MAN</td>
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</tbody>
</table>

* Ford engine 2011 or newer. Requires J1939 Translator Module

**Dimensions:** 6.75” (H) x 4.625” (W)

**Options:** Audible Alarm Buzzer • kPa / Bar / °C
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.

<table>
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<th>Kit Numbers</th>
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<td>TCA124</td>
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</tbody>
</table>

* Ford engine 2011 or newer. Requires J1939 Translator Module

Dimensions: 6" (H) x 7.5" (W)
Options: kPa / Bar / °C

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.

<table>
<thead>
<tr>
<th>Kit Numbers</th>
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<tbody>
<tr>
<td>PRA300</td>
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</tbody>
</table>

* Ford engine 2011 or newer. Requires J1939 Translator Module

Dimensions: 5.5" (H) x 10.5" (W)
Options: kPa / Bar / °C

Traditional PRO Governor
Latest Technology
**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*

**infinity-S**

Direct replacement for conventional vernier type throttles used on older Cummins, Detroit Diesel, and Navistar engines.
EXCLUSIVELY FRC

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.

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.

ORDERING INFORMATION

Infinity-Pro
STANDARD KIT includes hand throttle, identification plate, and cable

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
<th>Kit Numbers</th>
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<tbody>
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<td>ETA500</td>
<td>Field Programming Unit</td>
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Infinity-S
replacement for conventional vernier throttles.
STANDARD KIT includes replacement hand throttle, identification plate, and cable

<table>
<thead>
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<tbody>
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<td>Detroit Diesel</td>
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<tr>
<td>ETA204</td>
<td>Navistar</td>
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</tbody>
</table>

Dimensions: 3.25”(H) x 3”(W)

INFINITY Throttles are not engine governors and will not automatically compensate for engine load changes.
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.

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
<th>Kit Numbers</th>
<th>Description</th>
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<td>ELA206</td>
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</tbody>
</table>

Dimensions: 6.75” (H) x 4.625” (W)
Options:
- Audible Alarm Buzzer
- kPa / Bar / °C

* Ford engine 2011 or newer. Requires J1939 Translator Module
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.

**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

**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

<table>
<thead>
<tr>
<th>Kit Number</th>
<th>Description</th>
<th>Dimensions :</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPA600</td>
<td>TACH P3 Engine Monitoring Display</td>
<td>4.2’ (H) x 4.2’ (W)</td>
</tr>
</tbody>
</table>

*Requires J1939 Translator Module for FORD engines*
**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
**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

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**Ordering Information**

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

<table>
<thead>
<tr>
<th>300 Series</th>
<th>400 Series</th>
<th>Description</th>
<th>Additional Remotes</th>
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<tbody>
<tr>
<td>WLA300-A0</td>
<td>WLA400-A0</td>
<td>Water, Primary, Fractional</td>
<td>WLA205-A Water, Cab Mini</td>
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<tr>
<td>WLA300-A1</td>
<td>WLA400-A1</td>
<td>Water, Primary, Percentage</td>
<td>WLA265-A Foam Class A, Cab Mini</td>
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<tr>
<td>WLA300-B0</td>
<td>WLA400-B0</td>
<td>Water, Remote, Fractional</td>
<td>WLA275-A Foam Class B, Cab Mini</td>
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<tr>
<td>WLA300-B1</td>
<td>WLA400-B1</td>
<td>Water, Remote, Percentage</td>
<td>WLA290-A Driver, Remote Lights</td>
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<tr>
<td>WLA360-A0</td>
<td>WLA460-A0</td>
<td>Foam Class A, Primary, Fractional</td>
<td></td>
</tr>
<tr>
<td>WLA360-A1</td>
<td>WLA460-A1</td>
<td>Foam Class A, Primary, Percentage</td>
<td></td>
</tr>
<tr>
<td>WLA360-B0</td>
<td>WLA460-B0</td>
<td>Foam Class A, Remote, Fractional</td>
<td></td>
</tr>
<tr>
<td>WLA360-B1</td>
<td>WLA460-B1</td>
<td>Foam Class A, Remote, Percentage</td>
<td></td>
</tr>
<tr>
<td>WLA370-A0</td>
<td>WLA470-A0</td>
<td>Foam Class B, Primary, Fractional</td>
<td></td>
</tr>
<tr>
<td>WLA370-A1</td>
<td>WLA470-A1</td>
<td>Foam Class B, Primary, Percentage</td>
<td></td>
</tr>
<tr>
<td>WLA370-B0</td>
<td>WLA470-B0</td>
<td>Foam Class B, Remote, Fractional</td>
<td></td>
</tr>
<tr>
<td>WLA370-B1</td>
<td>WLA470-B1</td>
<td>Foam Class B, Remote, Percentage</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions:
- Standard: 4.375” (H) x 3” (W)
- Cab Mini: 2.75” (H) x 1.5” (W)

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

---

1.800.645.0074  www.fireresearch.com  17
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!

TANKVISION® DISPLAYS
25% REMAINING

MISLEADING!

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.

THIN WALL ADAPTER

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

EXCLUSIVELY FRC

MISLEADING!

OTHERS DISPLAY
50% REMAINING

EXCLUSIVELY FRC

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.
**MAXVISION**

PROGRAMMABLE LED TANK DISPLAY

**UP CLOSE OR FAR AWAY, THE PERFECT COMBINATION**

**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

**NEW MAX VIEW COMBINATIONS**

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
<th>Dimensions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA280-A</td>
<td>MaxVision Programmable LED Tank Display</td>
<td>14.375&quot; (H) x 1.875&quot; (W) x 0.875&quot; (D)</td>
</tr>
</tbody>
</table>
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**

**SINGLE PHASE GENERATOR DISPLAY**

**FEATUES**
- 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

**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.

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDA100-XXX</td>
<td>Frog-D, Single Phase</td>
</tr>
<tr>
<td>FDA700-XXX</td>
<td>Frog-D, Three Phase, Delta Windings</td>
</tr>
<tr>
<td>FDA710-XXX</td>
<td>Frog-D, Three Phase, Star Windings</td>
</tr>
</tbody>
</table>

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)
Interface Module - 3.8” x 5.9” x 1.9”

Options:
- Audible Alarm Buzzer
- Hydraulic Oil Temperature Sensor
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)

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.

FLOWMETERS & PRESSURE INDICATORS

INFORMATION

Portability

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

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTA400-XXX</td>
<td>GPM</td>
</tr>
<tr>
<td>FTA410-XXX</td>
<td>LPM</td>
</tr>
<tr>
<td>FTA500-XXX</td>
<td>GPM/PSI - This Kit Includes a Pressure Sensor</td>
</tr>
<tr>
<td>FTA510-XXX</td>
<td>LPM/kPa - This Kit Includes a Pressure Sensor</td>
</tr>
<tr>
<td>FTA520-XXX</td>
<td>LPM/Bar - This Kit Includes a Pressure Sensor</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tube Diameter</th>
<th>Standard Coupling</th>
<th>Flow Rate (in GPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NPT</td>
<td>w/flow sensor</td>
</tr>
<tr>
<td>1.5</td>
<td>2.5</td>
<td>13-320</td>
</tr>
<tr>
<td>2.0</td>
<td>2.5</td>
<td>21-520</td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>30-850</td>
</tr>
<tr>
<td>3.0</td>
<td>NPT</td>
<td>40-1380</td>
</tr>
<tr>
<td>4.0</td>
<td>NPT</td>
<td>80-2300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>w/pitot &amp; open butt</td>
</tr>
<tr>
<td>1.5</td>
<td>2.5</td>
<td>13-500</td>
</tr>
<tr>
<td>2.0</td>
<td>2.5</td>
<td>21-800</td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>13-1200</td>
</tr>
<tr>
<td>3.0</td>
<td>NPT</td>
<td>40-2000</td>
</tr>
<tr>
<td>4.0</td>
<td>NPT</td>
<td>80-3400</td>
</tr>
</tbody>
</table>

1.800.645.0074 www.fireresearch.com
Monitors up to 4 channels individually for flow & pressure
Memory records & stores data with time & date stamp
Operates in either manual or automatic mode
Built-in USB & PC interface for data retrieval in a spreadsheet format
Records up to 99 events in Automatic mode

ORDERING INFORMATION
STANDARD KIT includes test set with built-in battery and charger, flow tube, flow & pressure sensors & cables.

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
<th>For a kit with a single flow tube XXX = Flow Tube diameter (in inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTC200 -XXX</td>
<td>GPM / PSI</td>
<td></td>
</tr>
<tr>
<td>FTC210 -XXX</td>
<td>LPM / kPa</td>
<td></td>
</tr>
<tr>
<td>FTC220 -XXX</td>
<td>LPM / Bar</td>
<td></td>
</tr>
</tbody>
</table>
MONITOR / RECORD / STORE / RETRIEVE

EXCLUSIVELY FRC

AUTOMATIC MODE

Only Datatron offers automated flow and pressure testing. Simply program TIME and COUNTS into memory.

(Example: If the number of COUNTS is set at 10 and the TIME interval is set for 5, this equals a 45 minute recording session.)

Connect up to 4 tubes at the same time

Easy to read Flow and pressure readings at a glance

LED record indicator

USB port

PC connector port

LED charge indicator

FLOWMETERS & PRESSURE INDICATORS

1.800.645.0074 www.fireresearch.com
FLOWMETERS & PRESSURE INDICATORS

KNOW THE FLOW KNOW THE PRESSURE
HELPS KEEP YOUR NOZZLE MEN SAFER

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

NEW BACKLIGHTING
Available on INSIGHT Ultimate

EXCLUSIVELY FRC
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
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).

INSIGNIA INFORMATION

INSIGHT

STANDARD KIT includes display module, flow sensor w/mount, and cables.
- DFA400-XXX GPM
- DFA410-XXX LPM
- DFA400-000 Remote 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
- -ST1 Weldment, Steel
- -SS1 Weldment, Stainless
- -AL1 Weldment, Aluminum
- -PT1 Pipe Tee

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

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)
- FPA400 4.4” (H) x 4.4” (W)

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

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

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

* FRC does not offer a white border.
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.

FLOW SENSOR MOUNTING OPTIONS

A. Saddle Clamps are the standard mountings for 2” through 6” pipe sizes.
B. Weldment fittings are available in aluminum, steel, and stainless steel.
C. Pipe Tee fittings are NPT threaded, ranging from 1” through 4” 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.

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.
VEHICLE CAB DISPLAYS

SBA100
12 Seat Monitor with Lateral G Indicator and Message Display

SBA200
12 Seat Monitor with Message Display

SBA300
12 Seat Monitor

SBA400
6 Seat Monitor

VDR & Seat Monitor for Ford F-Series Super Duty Trucks*
Meets NFPA 1901 Requirements
*Kit Ordered as a Ford ship-thru option

Order the Ford systems with the FRC 6-Seat Monitor as an upgrade option. Ford Systems can be ordered with the wireless or USB Port VDR.

VDR INPUTS

Information is sent from these devices to the VDR

- Seat Occupied & Belt Status
- Ignition Switch
- Parking Brake Interlock
- Master Optical Warning
- Vehicle J1939 CAN

Lateral G Sensor Module

for use with SBA100 12-Seat Monitor with Lateral G Indicator and Message Display

1.800.645.0074 www.fireresearch.com

MONITORING SYSTEMS
VDR OUTPUTS

VEHICLE DATA RECORDERS

FRC Vehicle Data Recorders meet all NFPA1901 requirements for recording, storing, and uploading data.

All data is password protected.

**DATA TRANSFER**

Data from the VDR is uploaded via USB cable or wirelessly using our interface module or data collector.

**Our proprietary HAWK Software is the complete VDR data management package.**
HAWK SOFTWARE
IS AN INTEGRAL PART OF
THE SEAT MONITOR AND
DATA ACQUISITION SYSTEM

Install the HAWK Data Management Software
on a desktop or laptop computer

HAWK Menu Tabs Make Accessing Tasks Simple and User Friendly

- Review and Generate Customized Reports
- Secure Communication with the VDR
- Organize Multiple Site Locations
- Manage Multiple Fleet Vehicles
- Limit Access to Authorized Users
- Synchronize the Data Collector with HAWK

HAWK SOFTWARE Allows You to...

...Set-Up
Multiple User Profiles
with Different Levels
of Access

...Enter
Vehicle Profiles
and Site Information

Sort Data by Specific Criteria, Customize and Generate Reports
ORDERING INFORMATION

STANDARD KIT includes display module, Vehicle data recorder, cables, and HAWK software.

<table>
<thead>
<tr>
<th>12-Seat System Kit Numbers</th>
<th>6-Seat System Kit Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>w/Lateral G</td>
<td>w/o Lateral G</td>
</tr>
<tr>
<td>SBA100</td>
<td>SBA200</td>
</tr>
<tr>
<td>SBA110</td>
<td>SBA210</td>
</tr>
<tr>
<td>SBA120</td>
<td>SBA220</td>
</tr>
<tr>
<td>SBA130</td>
<td>SBA230</td>
</tr>
<tr>
<td>SBA143</td>
<td>SBA243</td>
</tr>
<tr>
<td>SBA300</td>
<td>SBA310</td>
</tr>
<tr>
<td>SBA320</td>
<td>SBA320</td>
</tr>
<tr>
<td>SBA330</td>
<td>SBA330</td>
</tr>
<tr>
<td>SBA343</td>
<td>USB VDR &amp; Seat Monitor System</td>
</tr>
</tbody>
</table>

Display Dimensions:
- SBA100 & SBA200 • 4.5" (H) x 4" (W) x 1.44" (D)
- SBA300 & SBA400 • 2.88" (H) x 5.1" (W) x 1.3" (D)

VDR Dimensions:
- 12-Seat • 3.75" (H) x 9.88" (W) x 2.5" (D)*
- 6-Seat • 3.8" (H) x 5.9" (W) x 1.9" (D)

*5.63" with wireless antenna extended

HAWK OEM software is available for body builders, dealers, and service personnel

HAWK OEM software makes programming at installation a snap by providing templates and diagnostic tools. Use it to update firmware, change factory default configuration, and perform functional testing.

HAWK Access is Limited to Established Users

The data and all programs are password protected

The Database

the Data Collector

the VDR

VDR Dimensions:
- 12-Seat • 3.75" (H) x 9.88" (W) x 2.5" (D)*
- 6-Seat • 3.8" (H) x 5.9" (W) x 1.9" (D)

*5.63" with wireless antenna extended
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.

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
<th>Options:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICA100</td>
<td>2-Station, Interior</td>
<td>Hand-Held Microphone and Jack on Master (A) Station</td>
</tr>
<tr>
<td>ICA200</td>
<td>2-Station, Surface Mount</td>
<td>Hand-Held Microphone and Jack on Master (B) Station</td>
</tr>
<tr>
<td>ICA300</td>
<td>3-Station, Surface Mount</td>
<td>Push-To-Talk Button on Remote Station (2-Way systems only)</td>
</tr>
<tr>
<td>ICA400</td>
<td>2-Station, Flush Mount</td>
<td>Additional Speaker (2-Way systems only)</td>
</tr>
<tr>
<td>ICA500</td>
<td>3-Station, Flush Mount</td>
<td></td>
</tr>
<tr>
<td>ICA900</td>
<td>2-or 3-Station</td>
<td></td>
</tr>
</tbody>
</table>
FRC INTERCOMS MEET THE DEMANDING NEEDS OF RESCUE AND FIRE SERVICE PERSONNEL FOR TWO OR THREE-WAY COMMUNICATION.

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.

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.
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 of rope
SDA100-A30  Markers for 300 feet of rope
SDA100-A40  Markers for 400 feet of rope

Standard Kit
Includes Bag, Safer Search Device, Direction and Distance Markers installed on rope, and two tag lines.
SDA200-A20  200 feet of rope with standard tag lines
SDA200-A30  300 feet of rope with standard tag lines
SDA200-A40  400 feet of rope with standard tag lines
SDA200-B20  200 feet of rope with retractable tag lines
SDA200-B30  300 feet of rope with retractable tag lines
SDA200-B40  400 feet of rope with retractable tag lines

A system with 200 feet of rope, a safer search device, and markers will weigh 11.5 lbs. and measure 15" x 12" x 7".
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

Elliptical Distance Marker
- The elliptical markers indicate 100 feet

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 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
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 insure 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.
**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™.

**WEDGE SHIM SELECTION CHART**

**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.

**ORDERING INFORMATION**

**STANDARD KIT** includes one bar and mounting hardware

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
<th>XX = Length (in inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSA110-AXX</td>
<td>ManSaver Bar</td>
<td>ManSaver/Platform length:</td>
</tr>
<tr>
<td>MSA120-AXX</td>
<td>Platform Bar</td>
<td>14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36”</td>
</tr>
<tr>
<td>MSA300-AXX</td>
<td>Bar w/o Pad &amp; Cover</td>
<td>Bench Seat Bar: 16, 18, 20, 22, 24”</td>
</tr>
<tr>
<td>MSA406-AXX</td>
<td>Bench Seat Bar</td>
<td>Aerial Bar: 24, 26”</td>
</tr>
<tr>
<td>MSA410-AXX</td>
<td>Aerial Bar with 6” loop</td>
<td>Options : Cover Color • Decal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Upright Pin • Rail Bracket</td>
</tr>
</tbody>
</table>

**ORDINAL WIDTH (W) INCHES**

<table>
<thead>
<tr>
<th>Width (W) inches</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>2</td>
<td>3</td>
<td>4.5</td>
<td>6</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
<td>3.5</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>22</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>7.5</td>
</tr>
<tr>
<td>24</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>26</td>
<td>2.5</td>
<td>4.5</td>
<td>6</td>
<td>7.5</td>
</tr>
<tr>
<td>28</td>
<td>2.5</td>
<td>5</td>
<td>7</td>
<td>10</td>
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<td>30</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>10.5</td>
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<tr>
<td>32</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>34</td>
<td>3</td>
<td>5.5</td>
<td>9</td>
<td>11.5</td>
</tr>
</tbody>
</table>

**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.)
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

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA100-AXX</td>
<td>American Flag (not available in 22 inch)</td>
</tr>
<tr>
<td>SSA200-AXX</td>
<td>Keep Back</td>
</tr>
<tr>
<td>SSA300-A00</td>
<td>Single Leg (4 inch)</td>
</tr>
<tr>
<td>XX</td>
<td>Size in Inches</td>
</tr>
<tr>
<td></td>
<td>Standard Sizes: 22, 23, 25, 27 (the width of the ladder)</td>
</tr>
</tbody>
</table>

Options: Horizontal Format • Red Vinyl • Custom Sizes

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.

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Kit Numbers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSA100</td>
<td>Jackstrap</td>
</tr>
</tbody>
</table>
### Pump

**Intake Pressure**
- **Model Number:** XE-I03100PT3-S
- **Pressure Range:** Absolute to 600 PSI
- **Proof Pressure:** 1200 PSI
- **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
- **Proof Pressure:** 1200 PSI
- **Excitation Voltage:** 5 VDC
- **Output Voltage:** 0.5 to 4.75 VDC
- **Thread Size:** 1/4-18 NPT

**Tank Pressure**
- **Model Number:** XE-WLPT4-S
- **Pressure Range:** 0 to 5 PSI
- **Proof Pressure:**
- **Excitation Voltage:** 5 VDC
- **Output Voltage:** 0.5 to 4.75 VDC
- **Thread Size:** 1/4-18 NPT

**Pump Overheat**
- **Model Number:** XE-TPQ1-S
- **Contact Temperature:** 130 °F
- **Reset Temperature:** 115 °F

### Engine

**Engine Oil Pressure**
- **Model Number:** XE-TPP1-S
- **Pressure Range:** 0 to 100 PSI
- **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
- **Thread Size:** 1/2-14 NPT

**Transmission Temperature**
- **Model Number:** XE-TPW2-S
- **Temperature Range:** 50 to 300 °F
- **Thread Size:** 5/8-18 UNF

**Transmission Temperature (insulated ground)**
- **Model Number:** XE-TPW3-S
- **Temperature Range:** 50 to 300 °F
- **Thread Size:** 5/8-18 UNF

**Static Resistance:** 240 - 33 Ohms

### Generator

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

**Current Sensors**
- **Ratio:**
  - **Model Number:** XE-FDCT1-S
    - Ratio: 150 : 5
  - **Model Number:** XE-FDCT2-S
    - Ratio: 300 : 5
  - **Model Number:** XE-FDCT3-S
    - Ratio: 400 : 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
Learn more on-line or request our FoamPro and FRC full line catalogs of foam proportioning, LED lighting, pole mounts, and video systems.

FRC
A Safe Fleet Brand

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