



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF WATER RESOURCES
20653 DUPONT BLVD
UNIT 5
GEORGETOWN, DE 19947

August 11, 2014

Jay Dolby
Dolby & Associates
22183 Sussex Highway
Seaford, DE 19973

RE: Limited approval of SJE Rhombus IFS C-level sensor in individual on-site wastewater treatment and disposal systems.

Dear Mr. Dolby,

The Division of Water Resources has received and reviewed your request to approve the use of SJE Rhombus IFS C-level sensor in the place of traditional floats, in a limited number of individual on-site wastewater treatment and disposal systems for assessment purposes. We are pleased to inform you that we are able to **approve** the requested use in 10 systems throughout the state, provided that they are installed in accordance with the manufacturer's installation instructions and specific permit conditions. Follow up information provided by the engineer will have direct bearing on the continued use of and permanent approval of the product.

If you have any other questions please contact me at 856-4561.

Sincerely,

A handwritten signature in blue ink that reads "James Cassidy".

James Cassidy
Program Manager I
Ground Water Discharges Section

Cc: file

Delaware's good nature depends on you!

1000 Gallon Dosing Chamber Section

___ Diameter Transmission Line

(NOT TO SCALE)

SPECIFICATIONS:

PUMP

GOULDS _____ FLOW _____ HEAD _____
 PRESSURE HEAD 2 1/2'

HIGH LEVEL ALARM ON SEPERATE CIRCUIT FROM PUMP
 ALARM/TIMER _____

TIMER SETTING _____ MINUTES, _____ SECONDS

EVERY _____ HOURS, _____ MINUTES

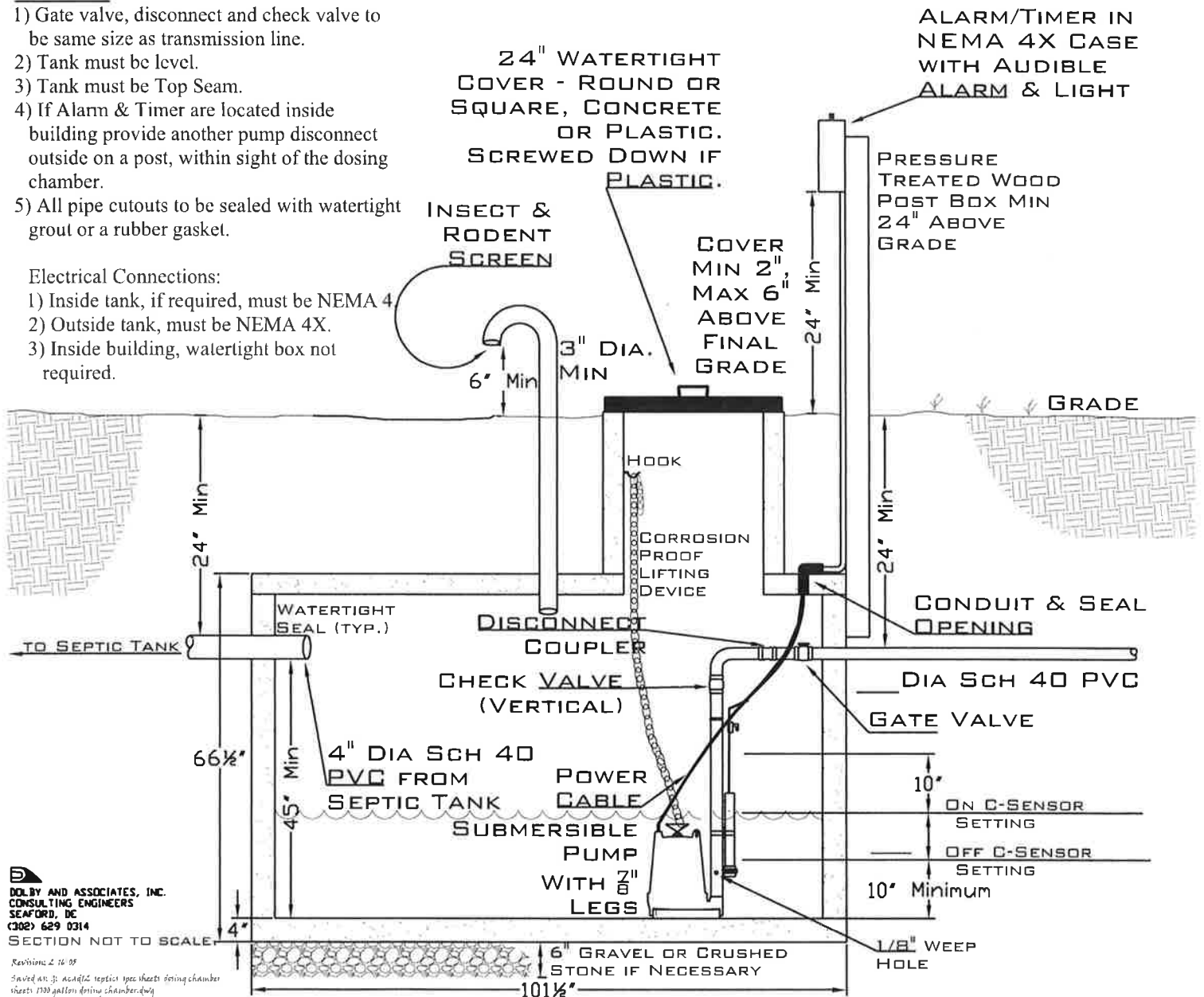
FLOAT SWITCH _____ FLOAT SETTING _____

Notes:

- 1) Gate valve, disconnect and check valve to be same size as transmission line.
- 2) Tank must be level.
- 3) Tank must be Top Seam.
- 4) If Alarm & Timer are located inside building provide another pump disconnect outside on a post, within sight of the dosing chamber.
- 5) All pipe cutouts to be sealed with watertight grout or a rubber gasket.

Electrical Connections:

- 1) Inside tank, if required, must be NEMA 4
- 2) Outside tank, must be NEMA 4X.
- 3) Inside building, watertight box not required.



DOLBY AND ASSOCIATES, INC.
 CONSULTING ENGINEERS
 SEAFORD, DE
 (302) 629-0314
 SECTION NOT TO SCALE

Revisions 2 to 05
 Saved as: Acad12 septic spec sheets dosing chamber
 sheets 1000 gallon dosing chamber.dwg

NEW IFS C-LEVEL™ SENSOR

Innovative FLOATLESS Technology

SJE-Rhombus® introduces the C-Level™ Sensor
for use with select Installer Friendly Series® panels.

C-Level™ Sensor *Patent Pending*

The C-Level™ sensor detects the liquid level in the tank and sends a signal to the IFS panel, which displays this level in inches or centimeters for easier monitoring of the system. Pump activation and alarm levels can be adjusted using panel touch pad, eliminating the need to go into the tank for manual adjustment.

C-Level™ Sensor Features:

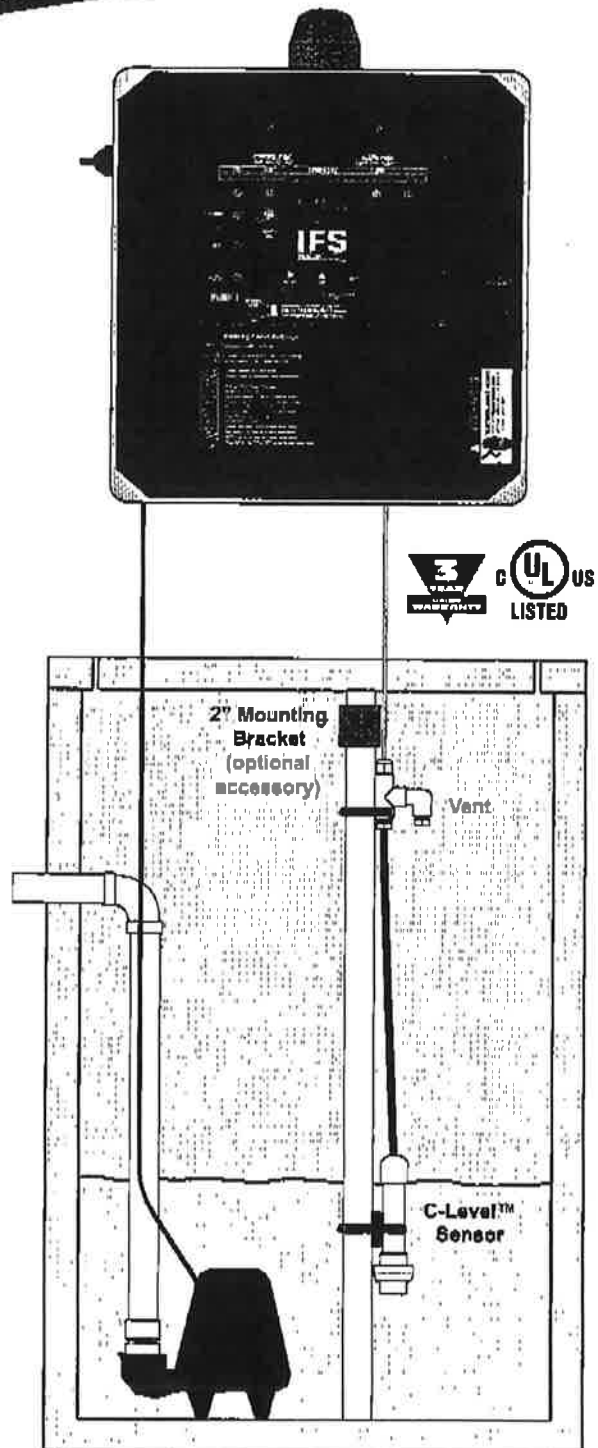
- Compact design works well in confined space applications
- Operates on low voltage
- One sensor replaces up to 4 floats
- Easy to install and adjust set points
- Works with most Installer Friendly Series® control panels

See reverse side for complete details on Installer Friendly Series® control panels.

SJE Rhombus®

22650 County Highway 6, PO Box 1708
Detroit Lakes, MN 56502 USA
1-888-DIAL-SJE ■ Fax: 218-847-4617
www.sjerrhombus.com

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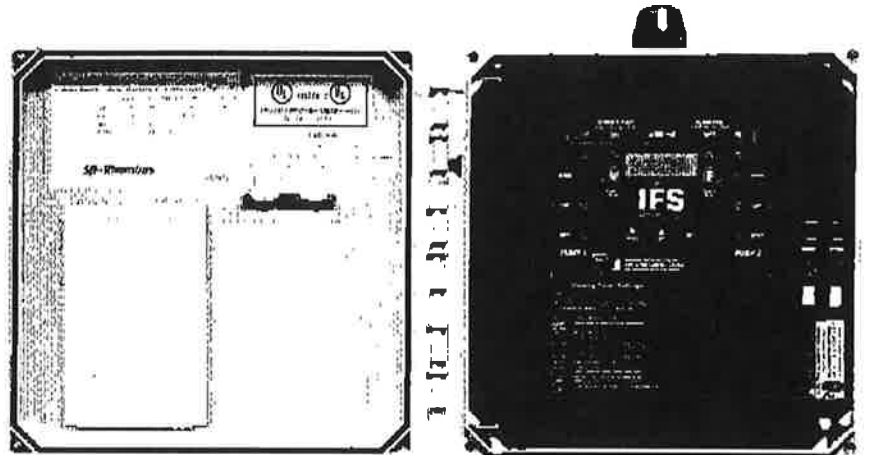


Float tree not included.

Installer Friendly Series® Control Panels

The innovative **Installer Friendly Series®** control panels from SJE-Rhombus® feature an **easy-to-use touch pad** on the inner door for programming and monitoring system information.

- IFS Single Phase Simplex and Duplex Demand/TD
- IFS Three Phase Simplex and Duplex Demand/TD
- IFS Single Phase Capacitor Start/Run Simplex and Duplex
- IFS InSite® Event Monitoring Simplex and Duplex Demand/TD



IFS PANEL FEATURES:

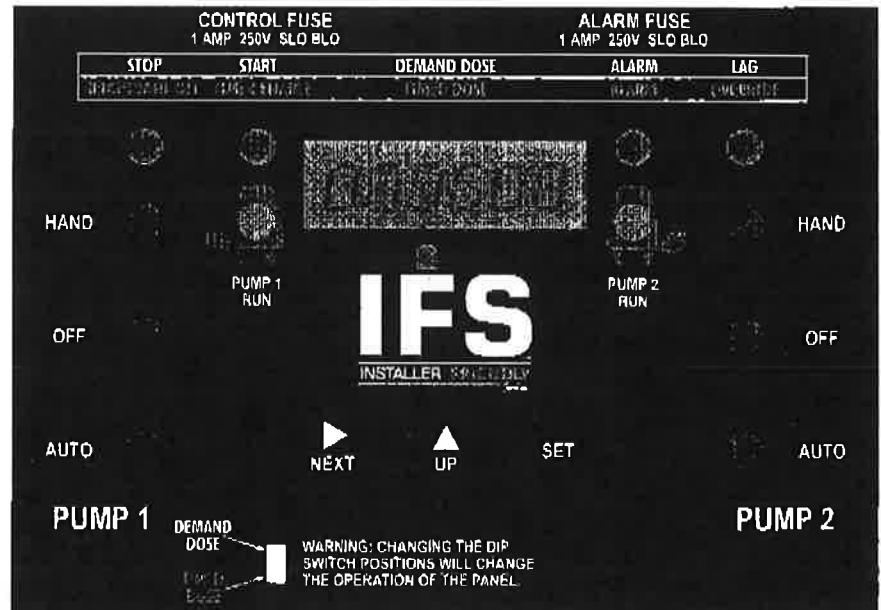
- **NEMA 4X** weatherproof enclosure for indoor/outdoor use
- Inner door for added safety
- New innovative circuit board design offers a clean installation
- Separate control and alarm fuses
- Digital display board is standard
- Alarm beacon and horn (85 decibel rating) provides audio/visual warning of alarm condition
- Test / normal / silence switch
- Panel can be easily converted to either demand dose to timed dose in the field
- Easy to read float/pump wiring diagram
- Instruction label on inside cover for viewing and programming digital display
- Includes step-by-step installation instructions



SJE Rhombus®

1-888-DIAL-SJE (1-888-342-5753)
www.sjerrhombus.com

Installer Friendly Series name and logo Reg. Cdn. Pat. & Tr. Off. Marque Déposée.
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TOUCH PAD/DISPLAY FEATURES:

- Easy-to-use touch pad for programming pump control
- Pump run indicator(s)
- Status indicators, including low water alarm
- HAND/OFF/AUTO pump control switch(es)
- Hand mode safety feature
- Six digit LED display (now a standard feature) includes:
 - Liquid level in tank in inches or centimeters (C-Level™ Sensor)
 - Elapsed time meter(s)
 - Cycle counter(s)
 - Alarm counter
 - Lead/Lag Selector toggles pump operation (duplex models)
 - Float error counter
 - Override counter (timed dose)

CONTROL PANELS

IFS 1 1 W 9 1 4 H BAC

MODEL IFS

- MODEL TYPE
 - 1 = SPLX TIMED DOSE (includes option BAC standard) \$800.00
 - 2 = SPLX DEMAND DOSE (includes option BAC standard) \$827.00
- ALARM PACKAGE
 - 1 = alarm package (includes test/normal/silence switch, fuse, red light & horn) Base
- ENCLOSURE RATING
 - W = NEMA 4X Base
- STARTING DEVICE
 - 1 = 120/208/240 VAC Base
 - 9 = 120 VAC Base
- PUMP FULL LOAD AMPS
 - 0 = 0-7 FLA Base
 - 1 = 7-15 FLA Base
 - 2 = 15-20 FLA \$80.00
- PUMP DISCONNECTS
 - 0 = no pump disconnect Base
 - 4 = circuit breaker
 - 120 VAC (must select starting device option 9) \$35.00
 - 120/208/240 VAC (must select starting device option 1) \$70.00
- SWITCH APPLICATIONS
 - H = floats (Timed dose = timer enable and alarm / Demand dose = stop, start, and alarm) (select 17 option) Base
 - X = no floats
 - timed dose -\$50.00
 - demand dose -\$75.00
 - C = C-Level™ sensor (must select 24 or 29 option)
 - (select option 3E and/or 4A & 4D for high water alarm and/or redundant off floats) -\$50.00
 - timed dose -\$50.00
 - demand dose -\$75.00



Note: Pump down applications only.
 Industry practices suggest that a secondary device, such as a float switch, be used for redundant activation of the high level alarm and pump shut off.

OPTIONS Listed below

CODE	DESCRIPTION	LIST PRICE	CODE	DESCRIPTION	LIST PRICE
<input type="checkbox"/>	1J Duo alarm inputs	\$25.00	<input type="checkbox"/>	15A Control / Alarm circuit breaker	\$85.00
<input type="checkbox"/>	3A Alarm flasher	\$50.00	<input type="checkbox"/>	16A 10' cord in lieu of 20' (per float)	\$2.00
<input type="checkbox"/>	3B Manual alarm reset	\$90.00	<input type="checkbox"/>	16B 15' cord in lieu of 20' (per float)	\$1.00
<input type="checkbox"/>	3E High water alarm float (must select 17 option) (Available only when Switch Applications = C)	\$25.00	<input type="checkbox"/>	16C 30' cord in lieu of 20' (per float)	\$5.00
<input type="checkbox"/>	4A Redundant off (select option 4D if floats are required) Demand Dose \$55.00 Timed Dose \$0.00		<input type="checkbox"/>	16D 40' cord in lieu of 20' (per float)	\$15.00
<input checked="" type="checkbox"/>	4D Redundant off float (must select 4A option) (must select 17 option)	\$25.00	<input type="checkbox"/>	17C Sensor Float® / internally weighted ▲ (per float)	\$5.00
<input type="checkbox"/>	6A Auxiliary alarm contacts, form C	\$40.00	<input type="checkbox"/>	17D Sensor Float® / externally weighted ▲ (per float)	\$7.00
<input checked="" type="checkbox"/>	BAC Display board includes: ETM counter, events (cycles) counter, alarm counter, and override counter (timed dose only). (Included as standard.)	\$0.00	<input type="checkbox"/>	17G MilliAmpMaster™ / pipe clamp ● (per float)	\$0.00
<input type="checkbox"/>	10E Lockable latch - NEMA 4X	\$40.00	<input checked="" type="checkbox"/>	17H MilliAmpMaster™ / externally weighted ● (per float)	\$7.00
<input type="checkbox"/>	10F Lightning arrestor (must select pump circuit breaker, control and alarm power combined)	\$230.00	<input checked="" type="checkbox"/>	17J Sensor Float™ / pipe clamp ▲ (per float)	\$0.00
<input type="checkbox"/>	10K Anti-condensation heater	\$100.00	<input type="checkbox"/>	18A Timer override float (timed dose float panel only)	\$25.00
<input type="checkbox"/>	11C NEMA 1 alarm panel (must select option 6A)	\$80.00	<input type="checkbox"/>	24E C-Level™ CL40 sensor with 4' vent tube & 20' cord	\$280.00
<input type="checkbox"/>	11D NEMA 4X alarm panel (must select option 6A)	\$250.00	<input type="checkbox"/>	24F C-Level™ CL40 sensor with 4' vent tube & 40' cord	\$310.00
			<input type="checkbox"/>	24G C-Level™ CL40 sensor with 8' vent tube & 20' cord	\$285.00
			<input type="checkbox"/>	24H C-Level™ CL40 sensor with 8' vent tube & 40' cord	\$315.00
			<input type="checkbox"/>	24X No C-Level™ CL40 sensor	\$0.00
			<input type="checkbox"/>	29A C-Level™ CL100 sensor w/10' vent tube & 20' cord	\$290.00
			<input type="checkbox"/>	29B C-Level™ CL100 sensor w/10' vent tube & 40' cord	\$320.00
			<input type="checkbox"/>	29X No C-Level™ CL100 sensor	\$0.00

3 REQ'D

If additional features are required, call the factory for a quote on an Engineered Custom control panel.

SAMPLE

MODEL	IFS 1 1 W 9 1 4 H BAC 10E17G	IFS1	See Price List
Model Type	1	1	Base
Alarm Package	1	W	Base
Enclosure Rating	W	9	Base
Starting Device	9	1	Base
Pump Full Load Amps	1	4	\$35.00
Pump Disconnects	4	H	Base
Switch Application	H	BAC	\$0.00
Options: Display, Lockable Latch, SJE MilliAmpMaster™/pipe clamp	BAC 10E17G	10E	\$40.00
		17G	\$0.00
		TOTAL LIST PRICE	\$XXX.XX

INSTALLER FRIENDLY SERIES® - IFS Single Phase Simplex (Demand/TD)

Single phase, simplex demand dose or timed dose, float or C-Level™ controlled system for pump control and system monitoring.

The IFS simplex control panel is designed to control one 120, 208, 240 VAC single phase pump in water and sewage installations. The panel features an easy-to-use touch pad with display on the inner door for programming and system monitoring. The panel configuration can be easily converted in the field to either a timed dose or demand dose.

The optional C-Level™ sensor is a pressure transducer that senses the liquid level in the tank and sends a signal to the IFS panel. Pump activation levels can be adjusted by using the panel touch pad. C-Level™ CL40 sensor operating range is 3-39.9 inches (7.6-101.3 cm). C-Level™ CL100 operating range is 3-99.5 inches (7.6-252.7 cm).

TOUCH PAD FEATURES

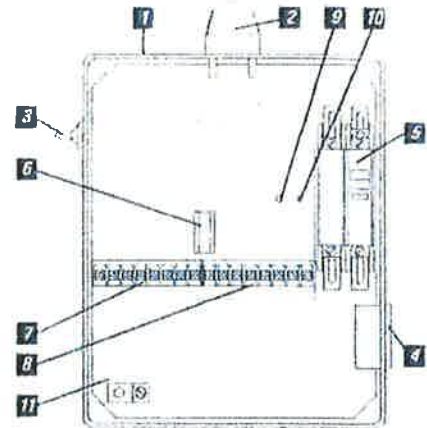
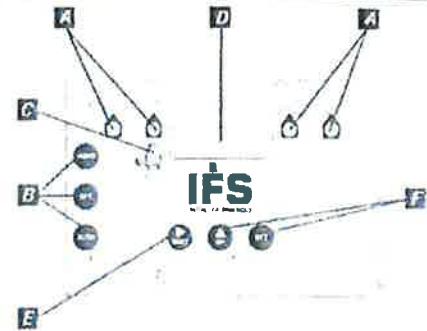
- A. **Level Status Indicators** illuminate when floats or set points are activated. Alarm will activate if a float operates out of sequence.
- B. **HOA (Hand-Off-Automatic) Buttons** control pump mode with indication. Hand mode defaults to Automatic when stop level or redundant off level is reached.
- C. **Pump Run Indicator** illuminates when pump is called to run.
- D. **LED Display** shows system information including: level in inches or centimeters (C-Level™ only), mode, pump elapsed time (hh:mm), events (cycles), alarm counter, float error count, timed dose override counter (timed dose only), and ON/OFF times (timed dose only).
- E. **NEXT Push Button** toggles display.
- F. **UP and SET Push Buttons** set pump ON/OFF times (timed dose only) or activation levels (C-Level™ only).

PANEL COMPONENTS

1. **Enclosure base** measures 10 X 8 X 4 inches (25.4 X 20.32 X 10.16 cm). NEMA 4X (ultraviolet stabilized thermoplastic with removable mounting feet for outdoor or indoor use). **Note:** Options, voltage, and amp range selected may change enclosure size and component layout.
2. **Red Alarm Beacon** provides 360° visual check of alarm condition.
3. **Exterior Alarm Test/Normal/Silence Switch** allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition is cleared.
4. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating).
5. **Circuit Breaker** (optional) provides pump disconnect and branch circuit protection.
6. **Power Relay** controls pump by switching electrical lines. Definite purpose contactor used when pump full load amps are above 15.
7. **Float Connection Terminal Block**
8. **Incoming Control/Alarm Power & Pump Terminal Block**
9. **Control Power Indicator/Fuse indicator light** illuminates if control power is present in panel. Alarm will activate if control fuse is blown.
10. **Alarm Power Indicator/Fuse indicator light** illuminates if alarm power is present in panel.
11. **Ground Lug**

NOTE: Schematic/Wiring Diagram and Pump Specification Label are located inside the panel on enclosure cover.

SEE BACKSIDE FOR COMPLETE LISTING OF AVAILABLE OPTIONS.



Model Shown IFS11W114X8AC

Reg. Cdn Pat. & TM Off.
C-Level™ Sensor: US Patent 8,330,305. Other patents pending.

FEATURES

- Entire control system is UL Listed to meet and/or exceed industry safety standards.
- Dual safety certification for the United States and Canada.
- Standard package includes:
Demand Dose - three 20' SJE MilliAmpMaster™ control switches
Timed Dose - two 20' SJE MilliAmpMaster™ control switches
- Complete with step-by-step installation instructions.
- Three-year limited warranty.



SJE Rhombus

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