

**LUMENITE
CONTROL
TECHNOLOGY, INC.**



IndustriaLeveline™

PaneLeveline™

LSP/LXP RF Capacitance Point Sensing

MLST/MLXT-4220 Continuous Transmitters

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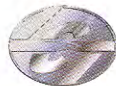
LUMENITE CONTROL TECHNOLOGY

Conception — History — Evolution

Lumenite's initial concept was to develop an intrinsically safe* conductivity type liquid level control particularly suitable for milk, food, and pharmaceutical applications. The device was to exhibit two very important qualities: sensitivity to any conductive liquid and negligible probe to ground voltage and current. Evolving from this initial concept is the present day Lumenite **Industrialeveline™** and **Paneleveline™**, intrinsically safe* point sensing liquid level controls. During Lumenite's many years of engineering design, the product line has expanded to include:

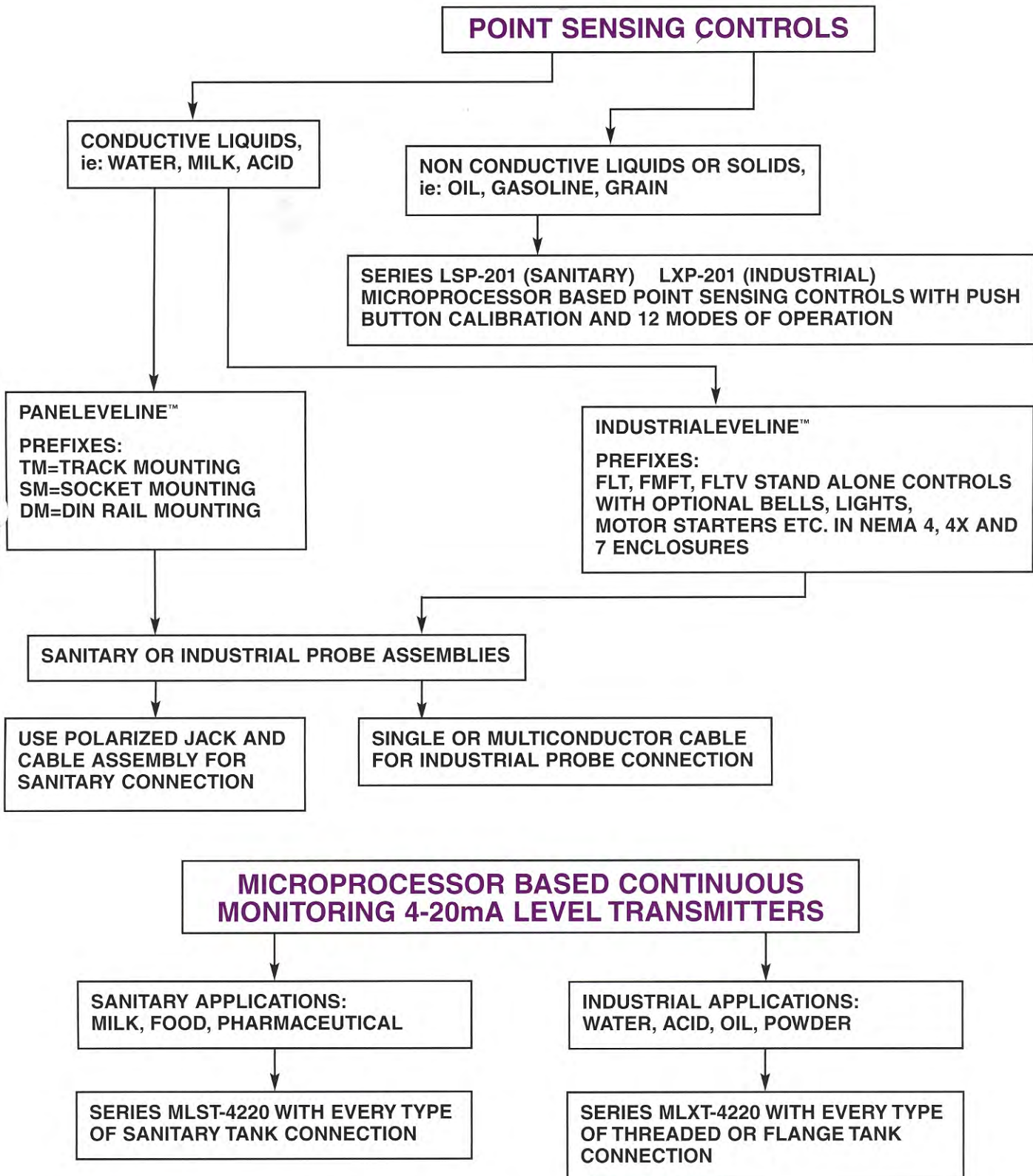
- A) **Industrialeveline™** conductivity type point sensing liquid level controls for industrial applications requiring heavy duty electronics mounted in nema 1, nema 4, 4x, or 7 enclosures, with optional accessories such as alarm bells, lights, selector switches, motor starters etc.
- B) **Paneleveline™** conductivity type point sensing liquid level controls in 3" track, din rail, or octal socket mountings particularly suited to panel builders with applications requiring compact size with industrial electrical specifications.
- C) **LSP/LXP-201** microprocessor based RF capacitance point sensing controls with 12 user selectable modes of operation. These controls are designed to sense non-conductive liquids and granular solids such as oil, gasoline, grain and similar non-conductive materials beyond the sensing range of conductivity type point sensors.
- D) **MLST/MLXT-4220** microprocessor based RF capacitance continuous monitoring level transmitters. These push button calibrated sanitary and industrial transmitters provide 4-20mA, 20-4mA, and 0-5VDC analog outputs proportional to material level in any shaped tank.

Much of what Lumenite is today is owed to that first conception and the controls which later evolved. Lumenite Control Technology and its well qualified distributors and sales representatives, dedicate their energy and talent to the primary goal, the total satisfaction of every customer.



*For intrinsically safe installation special relay(s) or barrier may be required. Consult factory.

LUMENITE POINT SENSING LEVEL CONTROL AND CONTINUOUS LEVEL TRANSMITTER SPECIFICATION GUIDE





FM

LUMENITE INDUSTRIALEVELINE™ CONDUCTIVITY TYPE POINT SENSING CONTROLS

Lumenite Industrialeveline™ Point Sensing Controls provide on/off operation of pumps, valves, alarms or any other electrically operated load. They may be connected to industrial or sanitary probes, thermostatic switches, mercury switches, float switches, or similar continuity devices to provide an intrinsically safe* on/off control system. For liquid level control applications, Lumenite offers an array of single or multiple probe assemblies for industrial or sanitary applications.

- **Completely Automatic**

Once the easily installed level control system begins operation, you are free to solve other plant maintenance and production problems. No longer must you manually control liquid levels in various containers.

- **Electronically Accurate**

Lumenite level control systems are accurate to less than one hundredth of an inch in the control of valves, pumps, signals or any other electrically operated load.

- **Intrinsically Safe*, Hygienically Clean**

With the advent of strict government codes, this feature has become extremely important. The Lumenite Control, with its patented "Sensing Circuit", eliminates any possibility of liquid contamination or shock hazards caused by probe to ground current.

THE LUMENITE CONTROL PROVIDES LESS THAN 0.00001 AMP PROBE CURRENT. NO OTHER CONDUCTANCE CONTROL IS SO SAFE AND HYGIENICALLY CLEAN IN ITS OPERATION.

TYPICAL APPLICATIONS

- Milk, Cream, Food, and Pharmaceutical Products
- Water and Waste Treatment applications
- Batching/Mixing Control
- Any conductive material with resistivity of 1meg-ohm or less
- Any low voltage resistance sensing amplifier application connected to probes, thermistors, photo cells, thermostats, float switches etc.

LEVEL CONTROL SPECIFICATIONS

- Maximum Power Consumption of 5 watts
- Standard Relay Contact rating of 10 amps
- Standard Level Control dimensions in #1 enclosure 10" height x 5" width x 5" depth
- Control may be mounted any distance from liquid container

*For intrinsically safe installation special relay(s) or barrier may be required. Consult factory.

CHART OF LIQUID RESISTANCES AND CORRESPONDING LUMENITE SENSITIVITY PREFIXES

For your convenience we have compiled a listing of typical conductive liquids with their resistivity, and the recommended Lumenite sensitivity prefix.

Suggested probe material has been included to assist the customer in assembling a complete system.

NOTE: If liquid foams when agitated and has resistivity of 1000ohms/cm³ or less, we recommend the "no foam" FMFT prefix.

Typical Liquid	Resistivity Range (ohms/cm ³) †	Lumenite Sensitivity Prefix	Recommended Probe Material
Milk	200-1,000	FMFT	SS
Cream	200-1,000	FMFT	SS
Whey	200-1,000	FMFT	SS
Egg Yoke	200-1,000	FMFT	SS
Egg White	200-1,000	FMFT	SS
Whipped Cream	200-1,000	FMFT	SS
Cream Style Corn	200-1,000	FMFT	SS
Soups	500-2,000	FLT	SS
Custards	500-2,000	FLT	SS
Fruit Juices	500-2,000	FLT	SS
Toppings	500-2,000	FLT	SS
Jellies	500-2,000	FLT	SS
Vinegars	500,2,000	FLT	SS
Cake Batters	500,2,000	FLT	SS
Sauces	500,2,000	FLT	SS
Molasses	500,2,000	FLT	SS
Beer	200,1,000	FMFT	SS
Tapwater	2,000-20,000	FLT	SS
Distilled Water	20,000-200,000		SS
Antibiotics	2000,000-2 megohms		SS
Refrigerants	*2 megohms - 20 megohms	CONSULT THE FACTORY	SS
Synthetic Latex	*2 megohms		
Hydrocarbons	20 megohms		SS
Potassium Acetate	4-18	FMFT	SS
Sodium Acetate	15-18	FMFT	SS
Acetic Acid	600-1300	FLT	HC
Butyric Acid	1000-2000	FLT	SS
Formic Acid	100-200	FMFT	SS
Hydrobromic Acid	2-5	FMFT	HB
Hydrochloric Acid	1-5	FMFT	HB
Hydrofluoric Acid	3-20	FMFT	M, HC
Hydroiodic Acid	8	FMFT	SS
Nitric Acid	1-5	FMFT	SS
Oxalic Acid	12-20	FMFT	SS
Phosphoric Acid	5-20	FMFT	HC
Prepionic Acid	900-1200	FMFT	M
Sulfuric Acid	1-10	FMFT	HC
Ammonia	1000-2000	FLT	SS
Cadmium Bromide	35-100	FMFT	SS
Mercuric Bromide	40,000-60,000	FLT	SS
Potassium Bromide	2-10	FMFT	SS
Lithium Carbonate	300	FMFT	SS
Sodium Carbonate	10-20	FMFT	SS

Typical Liquid	Resistivity Range (ohms/cm ³) †	Lumenite Sensitivity Prefix	Recommended Probe Material
Potassium Carbonate	5-20		SS
Ammonium Chloride	2-10		HC
Barium Chloride	5-15		SS
Cadmium Chloride	30-60		SS
Calcium Chloride	5-15		SS
Copper Chloride	10-15		HC
Lithium Chloride	5-15		SS
Magnesium Chloride	10-20		M
Potassium Chloride	4-18		SS
Sodium Chloride	5-15		SS
Strontium Chloride	5-12		SS
Zinc Chloride	10-15		M
Potassium Cyanide	1-20		SS
Potassium Fluoride	5-15		SS
Lithium Hydroxide	4-12		SS
Potassium Hydroxide	2-5		M
Sodium Hydroxide	5-20		M
Ammonium Iodide	2-12		SS
Cadmium Iodide	30-160		SS
Lithium Iodide	5-20		SS
Potassium Iodide	5-18		SS
Sodium Iodide	5-20		SS
Ammonium Nitrate	3-20		SS
Barium Nitrate	30-50		SS
Cadmium Nitrate	10-20		SS
Calcium Nitrate	10-20		SS
Cupric Nitrate	10-15		SS
Lead Nitrate	15-20		SS
Magnesium Nitrate	10-12		SS
Potassium Nitrate	5-12		SS
Silver Nitrate	5-20		SS
Sodium Nitrate	7-12		SS
Strontium Nitrate	10-15		SS
Potassium Oxalate	11		SS
Ammonium Sulfate	5-20		HC
Cadmium Sulfate	20-70		SS
Cupric Sulfate	20-100		SS
Lithium Sulfate	25		SS
Magnesium Sulfate	20-40		SS
Potassium Sulfate	12		M
Sodium Sulfate	8-12		SS
Zinc Sulfate	20-100		SS
Potassium Sulfide	2-10		SS
Sodium Sulfide	5-20		SS

Suitable Probe Materials:
 SS = 303 or 316 Stainless Steel
 M = Monel
 HC = Hastelloy C
 †Measured at normal room temperature.

NOTE: If you are unsure of the liquid's resistivity, please consult the factory or submit a sample for testing. For liquids or powders with resistivity above 1 meg ohm, specify LXP-201 or LSP-201 series.



INDUSTRIALEVELINE™ POINT SENSING LIQUID LEVEL CONTROLS WITH INTEGRATED MODULAR DESIGN



STANDARD SINGLE LEVEL CONTROLS WITH OPTIONAL ACCESSORIES

OPERATION:

Load circuit can be either opened or closed when liquid touches probe.

With magnetic motor starter: Depress start button, load goes on. When liquid reaches probe, load goes off. For emptying operation, load goes off when liquid falls below probe.



SERIES 101

OPERATION:

High-level alarm and signal light operation.

When liquid touches the probe, alarm and light go on. Depress alarm stop button, alarm goes off, but light remains on. When liquid falls below the probe, light goes off.



SERIES 103

OPERATION:

Low-level alarm and signal light operation.

When liquid falls below the probe, alarm and light go on. Depress alarm stop button, alarm goes off, but light remains on. When liquid touches the probe, light goes off.



SERIES 104

SEE PAGES (18-19) FOR CHASSIS AND ENCLOSURE DIMENSIONS.

WIRING SCHEMATICS ON PAGES 15 - 17.

STANDARD AND OPTIONAL ENCLOSURES FOR ABOVE LEVEL CONTROLS



STANDARD NEMA 1



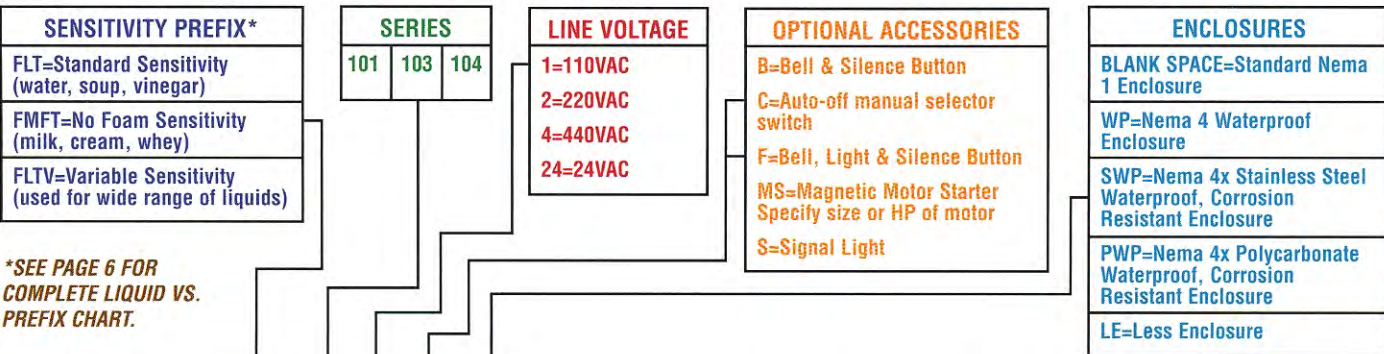
WP= NEMA 4



SWP= NEMA 4x STAINLESS



PWP= NEMA 4x POLYCARBONATE



EXAMPLE: MODEL FMFT -103 1- F-C-SWP= No foam 103 series 110 volt control with bell, light, silence button, auto-off manual selector switch mounted in Nema 4x stainless steel, waterproof, corrosion resistant enclosure.



INDUSTRIAL LEVELINE™ POINT SENSING LIQUID LEVEL CONTROLS WITH INTEGRATED MODULAR DESIGN



STANDARD TWO LEVEL CONTROLS WITH OPTIONAL ACCESSORIES

OPERATION:

Automatic filling:

When liquid falls below the low level probe, load goes on. When liquid reaches the high level probe, load goes off.

Automatic emptying:

When liquid reaches the high level probe, load goes on. When liquid falls below the low level probe, load goes off.

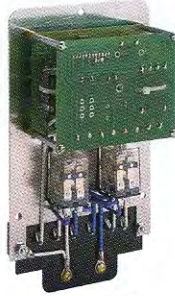


SERIES 201

OPERATION:

Alarm and signal light operation:

When liquid reaches the high level probe, alarm and light go on. When liquid falls below the low level probe, alarm goes on, but light remains off. When liquid is between the high and low level probes, both signals are off.

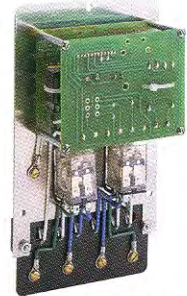


SERIES 202

OPERATION:

Two isolated, normally open load circuits, one circuit closed at each level:

When liquid reaches the low level probe, load 1 goes on. When liquid reaches the high level probe, load 2 goes on.



SERIES 205

WIRING SCHEMATICS ON PAGES 15 - 17.

SEE PAGES (18-19) FOR CHASSIS AND ENCLOSURE DIMENSIONS.

STANDARD AND OPTIONAL ENCLOSURES FOR ABOVE LEVEL CONTROLS



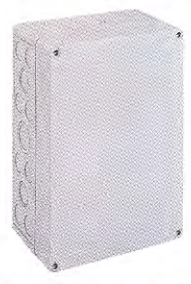
STANDARD NEMA 1



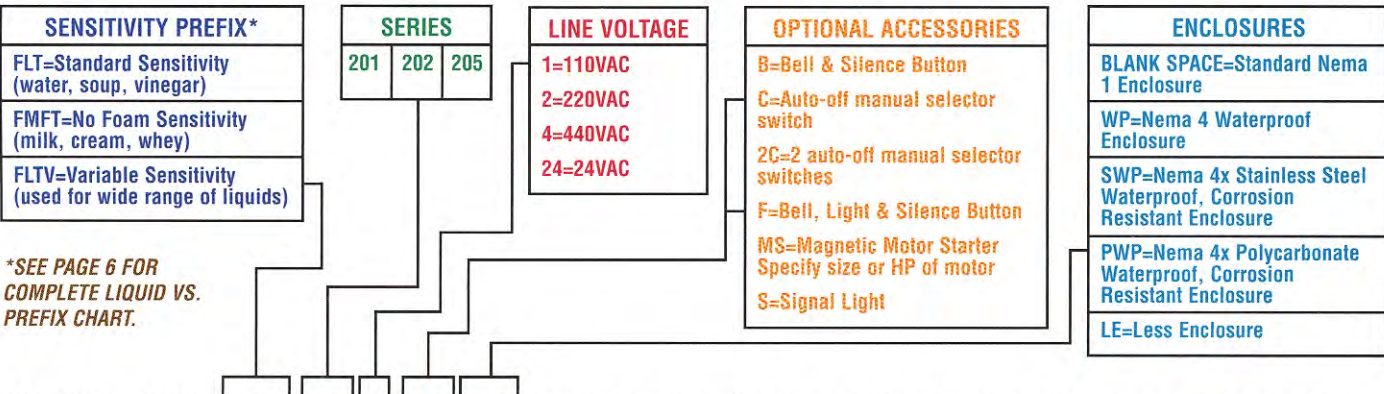
WP= NEMA 4



SWP= NEMA 4x STAINLESS



PWP= NEMA 4x POLYCARBONATE



EXAMPLE: MODEL **FLTV -202 1- F-C-PWP**= Variable sensitivity 202 series 110 volt control with bell, light, silence button, auto-off manual selector switch mounted in Nema 4x polycarbonate, waterproof, corrosion resistant enclosure.



INDUSTRIALEVELINE™ POINT SENSING LIQUID LEVEL CONTROLS WITH INTEGRATED MODULAR DESIGN

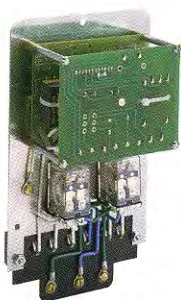


STANDARD THREE LEVEL CONTROLS WITH OPTIONAL ACCESSORIES

OPERATION:

Automatic filling with high level signal:

When liquid falls below the low level probe, load goes on. When liquid reaches the middle level probe, the load goes off. If liquid reaches the high level probe, the signal goes on.

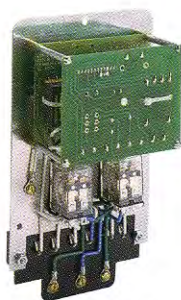


SERIES 301

OPERATION:

Automatic emptying with high level signal:

When liquid reaches the middle level probe the load goes on. When liquid falls below the low level probe, the load goes off. If liquid reaches the high level probe, the signal goes on.

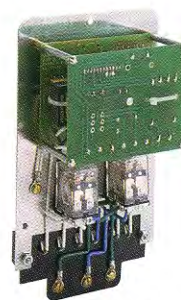


SERIES 302

OPERATION:

Automatic filling with low level signal:

When liquid falls below the middle level probe, the load goes on. When liquid reaches the high level probe, the load goes off. If liquid falls below the low level probe, the signal goes on.



SERIES 303

WIRING SCHEMATICS ON PAGES 15 - 17.

SEE PAGES (18-19) FOR CHASSIS AND ENCLOSURE DIMENSIONS.

STANDARD AND OPTIONAL ENCLOSURES FOR ABOVE LEVEL CONTROLS



STANDARD NEMA 1



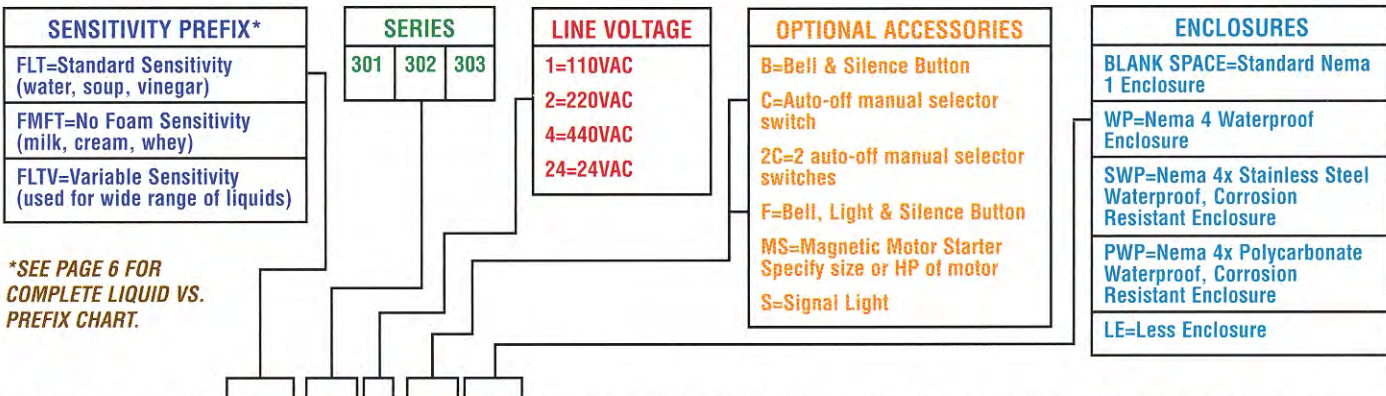
WP= NEMA 4



SWP= NEMA 4x STAINLESS



PWP= NEMA 4x POLYCARBONATE



EXAMPLE: MODEL **FLT -302 2- F-C- WP=** Standard sensitivity 302 series 220 volt control with bell, light, silence button, auto-off manual selector switch mounted in Nema 4, waterproof enclosure.



INDUSTRIAL LEVELINE™ POINT SENSING LIQUID LEVEL CONTROLS WITH INTEGRATED MODULAR DESIGN



STANDARD THREE & FOUR LEVEL CONTROLS WITH OPTIONAL ACCESSORIES

OPERATION:

Automatic emptying with low level signal:

When liquid reaches the high level probe, the load goes on. When liquid falls below the middle level probe, the load goes off. If liquid falls below the low level probe, the signal goes on.

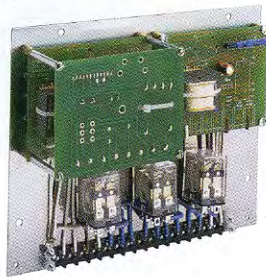


SERIES 304

OPERATION:

Three isolated SPDT (Form C) relays:

Each relay operates off its corresponding probe. Liquid reaches low probe, load 1 goes on, load 2 goes off. Liquid reaches middle level probe, load 3 goes on, load 4 goes off. Liquid reaches high level probe, load 5 goes on, load 6 goes off.



SERIES 305

OPERATION:

4 level operation:

Alarm #1 goes on at high level probe. Alarm #2 goes on when liquid falls below low level probe. Load goes on and off between two intermediate probes.

Frequently specified by water/waste pumping stations.



SERIES 404 (Shown in Din Rail Panel Mount)

WIRING SCHEMATICS ON PAGES 15 - 17.

SEE PAGES (18-19) FOR CHASSIS AND ENCLOSURE DIMENSIONS.

STANDARD AND OPTIONAL ENCLOSURES FOR ABOVE LEVEL CONTROLS



STANDARD NEMA 1



WP= NEMA 4



SWP= NEMA 4x STAINLESS



PWP= NEMA 4x POLYCARBONATE

SPECIFICATION AND ORDERING CODE

SENSITIVITY PREFIX*

- FLT=Standard Sensitivity (water, soup, vinegar)
- FMFT=No Foam Sensitivity (milk, cream, whey)
- FLTV=Variable Sensitivity (used for wide range of liquids)

*SEE PAGE 6 FOR COMPLETE LIQUID VS. PREFIX CHART.

SERIES

- 304
- 305
- 404

LINE VOLTAGE

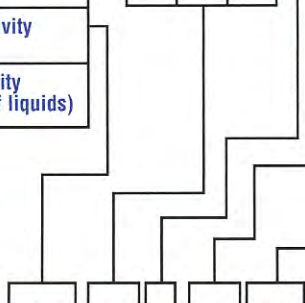
- 1=110VAC
- 2=220VAC
- 4=440VAC
- 24=24VAC

OPTIONAL ACCESSORIES

- B= Bell & Silence Button
- C= Auto-off manual selector switch
- 3C= 3 auto-off manual selector switches
- F= Bell, Light & Silence Button
- MS= Magnetic Motor Starter Specify size or HP of motor
- S= Signal Light

ENCLOSURES

- BLANK SPACE= Standard Nema 1 Enclosure
- WP= Nema 4 Waterproof Enclosure
- SWP= Nema 4x Stainless Steel Waterproof, Corrosion Resistant Enclosure
- PWP= Nema 4x Polycarbonate Waterproof, Corrosion Resistant Enclosure
- LE= Less Enclosure



EXAMPLE: MODEL FMFT-305 1-3C-WP= No foam 305 series 110 volt control with 3 auto-off manual selector switches mounted in Nema 4 waterproof enclosure.



SPECIAL INDUSTRIAL LEVELINE™ POINT SENSING LIQUID LEVEL CONTROLS WITH INTEGRATED MODULAR DESIGN



SPECIAL SINGLE LEVEL CONTROLS WITH OPTIONAL ACCESSORIES

OPERATION:

Single level control with time delay circuit:

When liquid touches the probe, the load goes on for the preset time on the time delay relay. The control resets itself after the time delay.



SERIES 101-TD

WIRING SCHEMATICS ON PAGES 15 - 17.

OPERATION:

Multi-tank control with high level alarm:

Place selector switch in T1 position and depress remote start button to start load. When liquid touches the probe, the load goes off and the alarm sounds. Place switch in T2, T3, T4 T5 etc. positions and repeat sequence for tanks 2, 3, 4, 5, etc.



SERIES 102-T

OPERATION:

Single level control of 2 loads through double pole double throw (2 form C) relay circuit:

When liquid falls below the probe, loads 1 and 2 go on. When liquid touches probe, loads 1 and 2 go off.



SERIES 101-2FC

SEE PAGES (18-19) FOR CHASSIS AND ENCLOSURE DIMENSIONS.

STANDARD AND OPTIONAL ENCLOSURES FOR ABOVE LEVEL CONTROLS



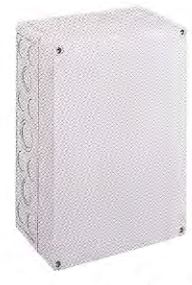
STANDARD NEMA 1



WP= NEMA 4



SWP= NEMA 4x STAINLESS

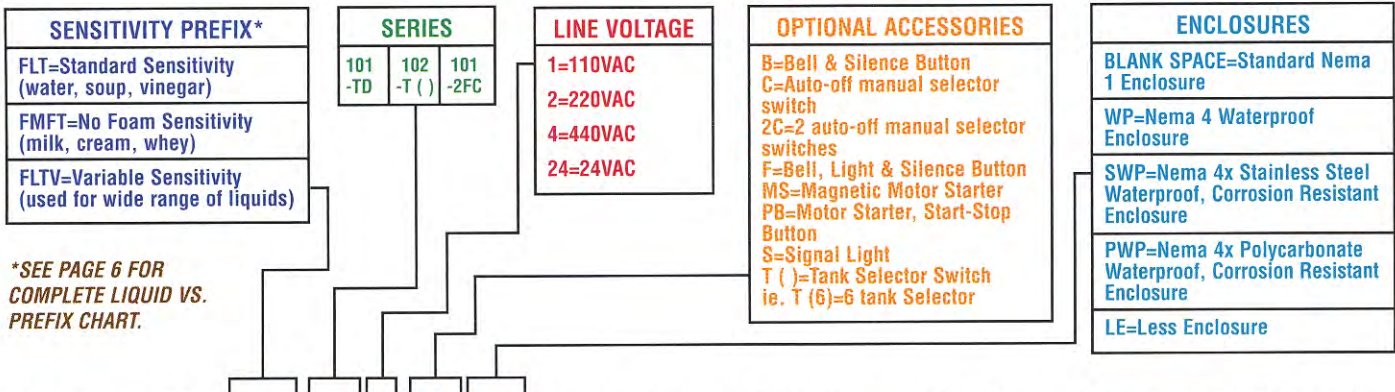


PWP= NEMA 4x POLYCARBONATE

Consult factory for case dimensions on Series 102-T5 or more.

NOTE: The above cases are used for 102T series up to 4 tanks.

SPECIFICATION AND ORDERING CODE



EXAMPLE: MODEL **FLTV -102 1- T6- SWP**= Variable sensitivity 102-T () series 110 volt control with 6 tank selector switch mounted in Nema 4x stainless steel, waterproof, corrosion resistant enclosure. NOTE: For 101-TD series, specify desired time delay range.



SPECIAL INDUSTRIAL LEVELINE™ POINT SENSING LIQUID LEVEL CONTROLS WITH INTEGRATED MODULAR DESIGN

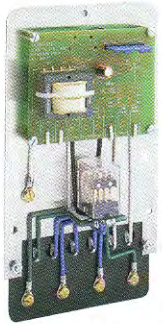


SPECIAL TWO LEVEL CONTROLS WITH OPTIONAL ACCESSORIES

OPERATION:

Two level filling or emptying control of 2 loads through a double pole, double throw (2 form C) relay circuit:

When liquid falls below the low probe, loads 1 and 2 go on. When liquid reaches high level probe, loads 1 and 2 go off.



SERIES 201-2FC

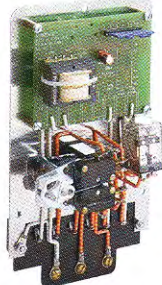
WIRING SCHEMATICS ON PAGES 15 - 17.

OPERATION:

High and low level pump alternator for longer pump life.

Cycle #1: When liquid falls below low level probe, pump #1 goes on. When liquid reaches the high level probe, pump #1 goes off.

Cycle #2: Pump #2 operates instead of Pump #1. Pumps continue to operate alternately between high and low probes.



SERIES 207

OPERATION:

Multiple tank filling or emptying operation with signal lights:

Selector in T1 position: When liquid falls below low level probe, load and green light come on. When liquid reaches high level probe, load and green light go off, red light comes on. Place selector switch in T2, T3, T4 etc. position to repeat operation for corresponding tank.



SERIES 201-T ()

SEE PAGES (18-19) FOR CHASSIS AND ENCLOSURE DIMENSIONS.

STANDARD AND OPTIONAL ENCLOSURES FOR ABOVE LEVEL CONTROLS

NOTE: These cases are used for 201-T () series up to 3 tanks. Consult factory for larger sizes. For units with motor starters, consult factory for enclosure dimensions.



STANDARD NEMA 1



WP= NEMA 4

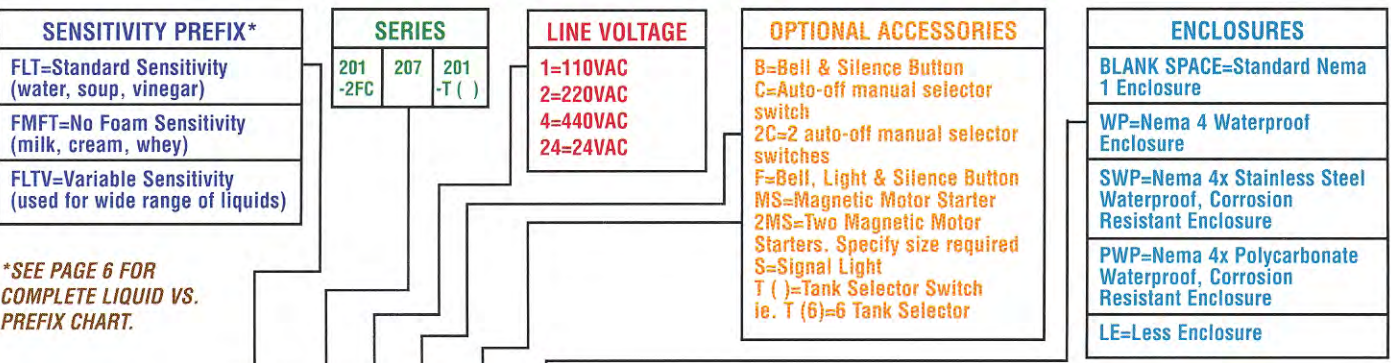


SWP= NEMA 4x STAINLESS



PWP= NEMA 4x POLYCARBONATE

SPECIFICATION AND ORDERING CODE



EXAMPLE: MODEL **FLT - 207 1- 2C- 2MS - WP=** Standard Sensitivity 207 series 110 volt pump alternator control with two auto-off manual selector switches and two magnetic motor starters mounted in Nema 4 waterproof enclosure. Specify size of motor starter required.



SPECIAL INDUSTRIAL LEVELINE™ POINT SENSING LIQUID LEVEL CONTROLS WITH INTEGRATED MODULAR DESIGN



SPECIAL THREE AND FOUR LEVEL CONTROLS WITH OPTIONAL ACCESSORIES

OPERATION:

Three level emptying operation for two alternating pumps.

Cycle #1: When liquid reaches middle level probe, pump #1 starts. When liquid falls below low level probe, pump #1 stops.

Cycle #2: Pump #2 operates instead of pump #1. If liquid reaches high level probe, both pumps operate until liquid falls below the low level probe.



SERIES 307

OPERATION:

Three pump alternating control for 4-probes-emptying operation.

Cycle #1: When liquid reaches medium level probe, pump #1 comes on. If liquid reaches high level probe, pump #2 comes on. If liquid reaches high-high level probe, pump #3 comes on. Pump(s) remain on until liquid falls below low level probe.

Cycle #2: is the same as #1 except pump #2 comes on first. Pumps 1, 2 and 3 alternate in operation between medium, high, and high-high probes.



SERIES 407

OPERATION:

Three start and stop 2-level operations for separate tanks or the same tank— 3 tank example:

When liquid falls below low level probe of tank #1, pump #1 starts. When liquid reaches high level probe of tank #1, pump #1 stops. The same sequence occurs in tanks #2 and #3 for pumps #2 and #3.

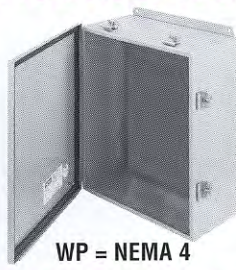


SERIES 601

STANDARD AND OPTIONAL ENCLOSURES FOR ABOVE LEVEL CONTROLS



For units with motor starters consult factory for dimensions of enclosure.



WP = NEMA 4

Wiring schematics on pages 15-17.

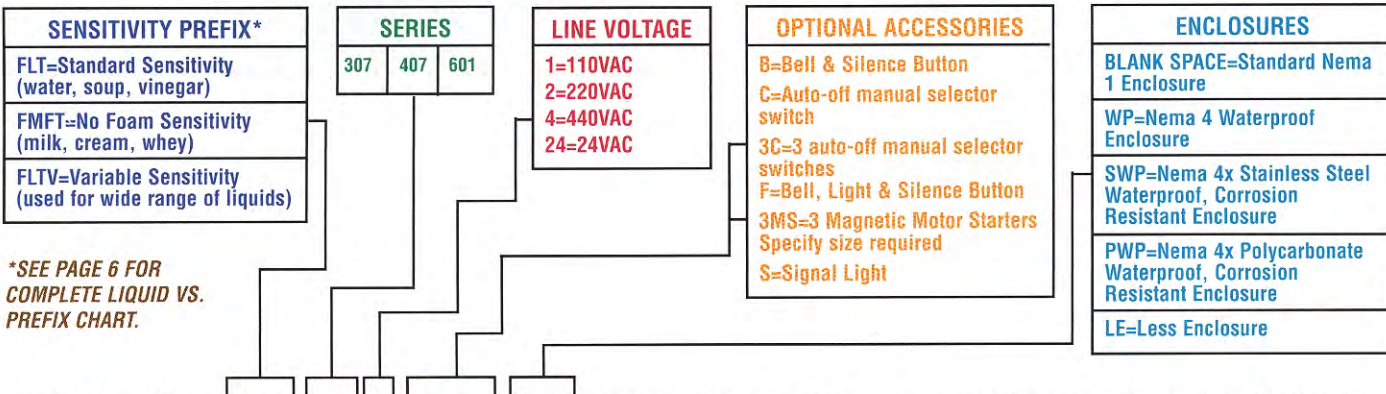
See pages 18-19 for chassis and enclosure dimensions.



PWP = NEMA 4x POLYCARBONATE

SWP = NEMA 4x STAINLESS

SPECIFICATION AND ORDERING CODE



EXAMPLE: MODEL **FMFT - 407 4- 3C-3MS- SWP**= No foam 407 series 440 volt control with three auto-off manual selector switches, three magnetic motor starters, all mounted in stainless steel Nema 4x enclosure. Specify size of motor starter(s).

LUMENITE CONTROL TECHNOLOGY INDUSTRIALEVELINE™ MULTI-PUMP ALTERNATOR CONTROLS

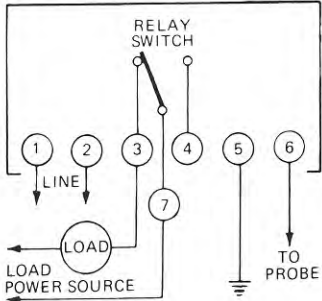


MODEL FLTV-4072-3C-3MS-WP

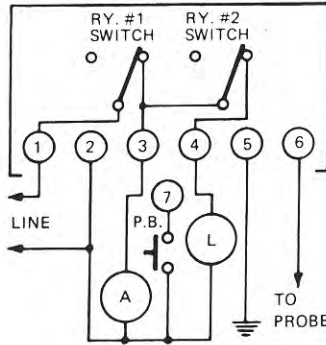
Three pump alternator control with 3 size 50 H.P. 220VAC motor starters, 3 auto-off-manual selector switches, and variable sensitivity feature, all mounted in Nema 4 waterproof enclosure.

WIRING SCHEMATICS AND CONNECTION DIAGRAMS FOR INDUSTRIALEVELINE™ LIQUID LEVEL CONTROLS

101 AND 102 SERIES

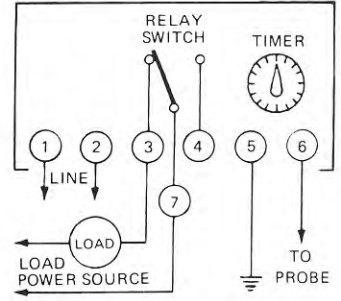


103 AND 104 SERIES

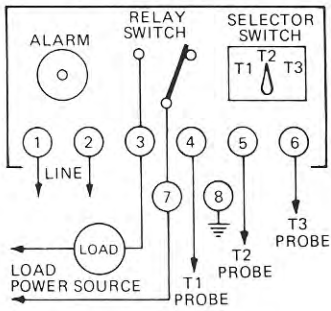


**FOR 103 SERIES,
RY. #2 SWITCH TRANSFERS
WHEN POWER IS APPLIED.**

101-TD SERIES

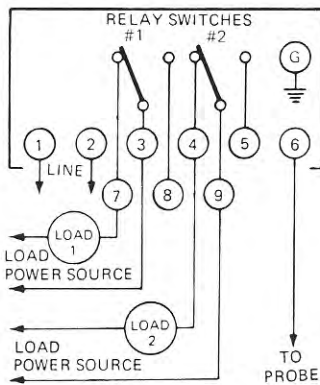


102-T () SERIES

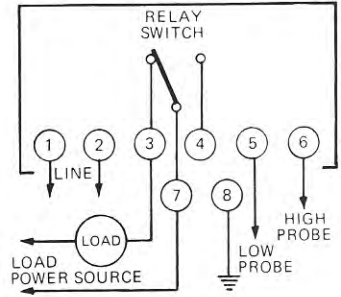


**FOR 102-T () SERIES, RELAY
SWITCH TRANSFERS WHEN
POWER IS APPLIED.**

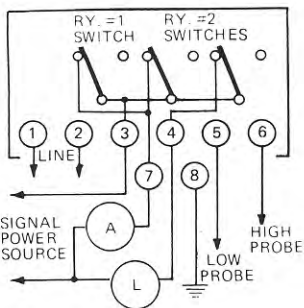
101-2 FC SERIES



201 SERIES

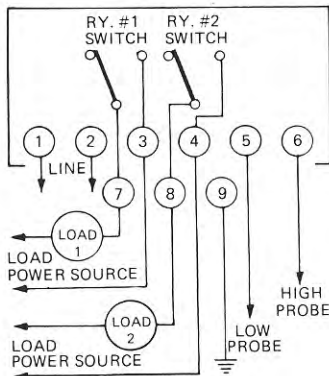


202 SERIES

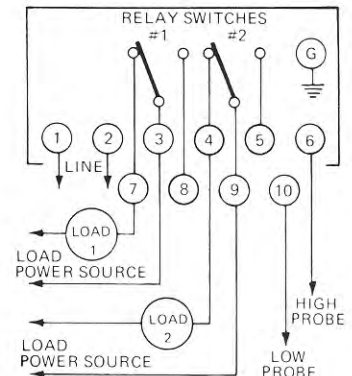


**FOR 202 SERIES, RY. #2
SWITCHES TRANSFER WHEN
POWER IS APPLIED.**

205 SERIES

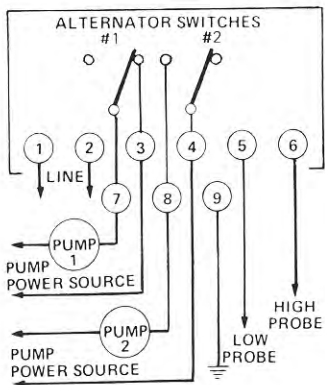


201-2FC SERIES

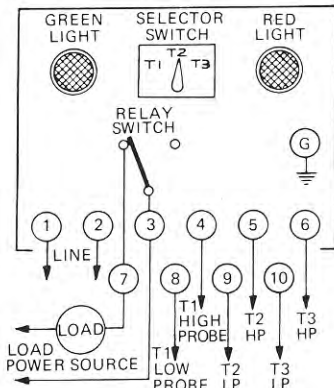


WIRING SCHEMATICS AND CONNECTION DIAGRAMS FOR INDUSTRIALEVELINE™ LIQUID LEVEL CONTROLS

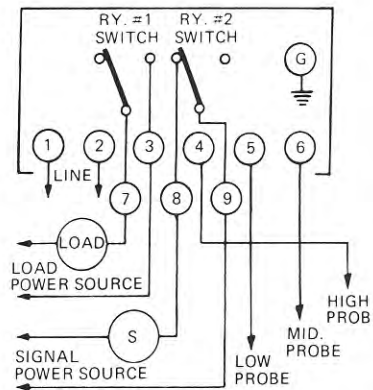
207 SERIES



201-T () SERIES

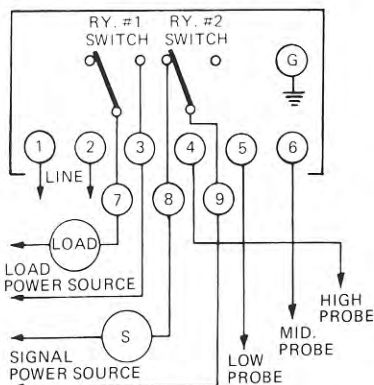


301 SERIES



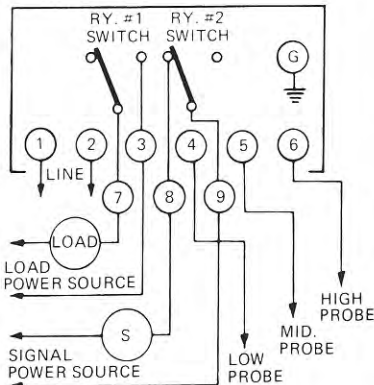
**FOR 301 SERIES,
RY. #1 and RY. #2 SWITCHES
TRANSFER WHEN POWER
IS APPLIED.**

302 SERIES



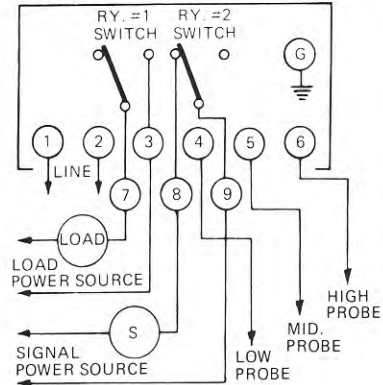
**FOR 302 SERIES, RY. #2 SWITCH
TRANSFERS WHEN POWER
IS APPLIED.**

303 SERIES

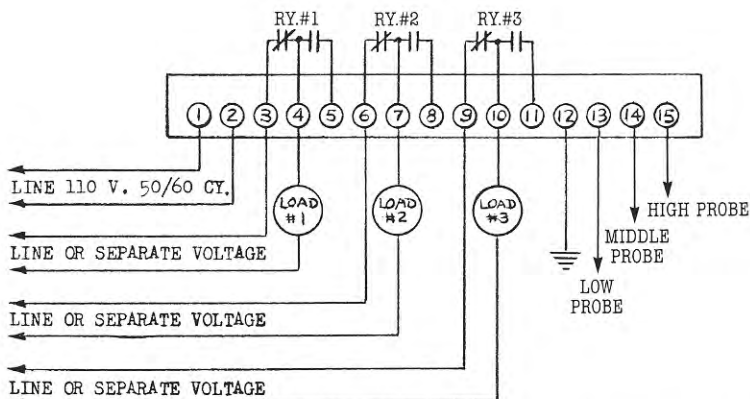


**FOR 303 SERIES, RY. #1 SWITCH
TRANSFERS WHEN POWER
IS APPLIED.**

304 SERIES

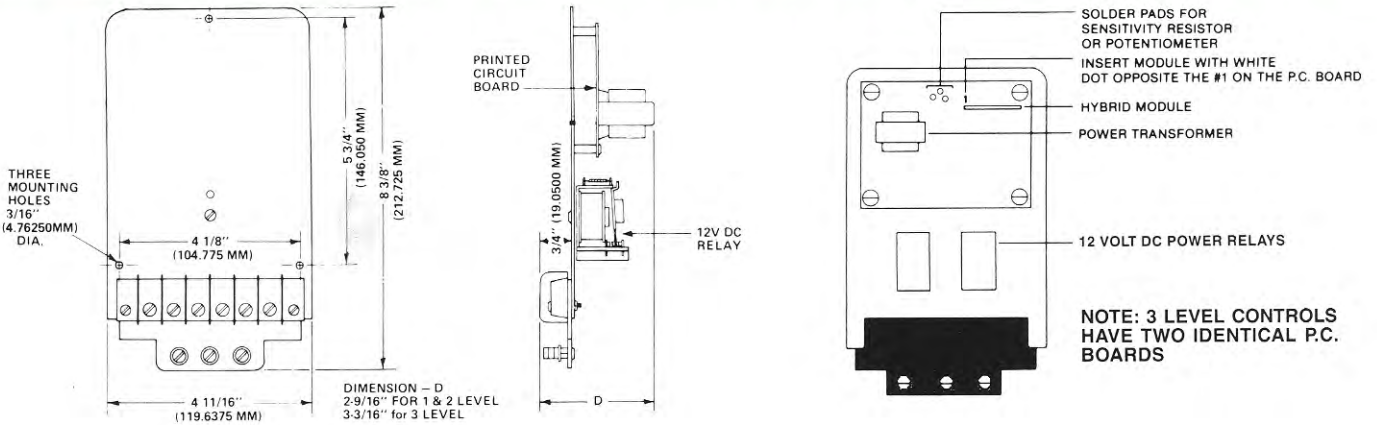


305 SERIES

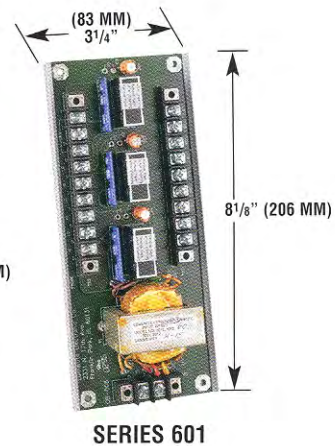
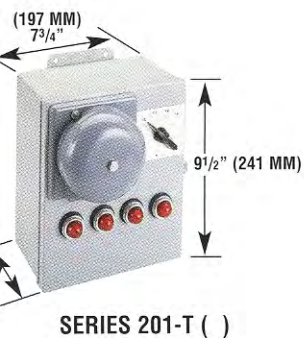
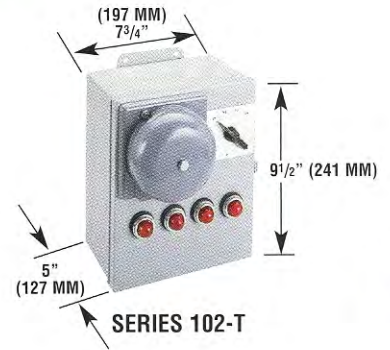
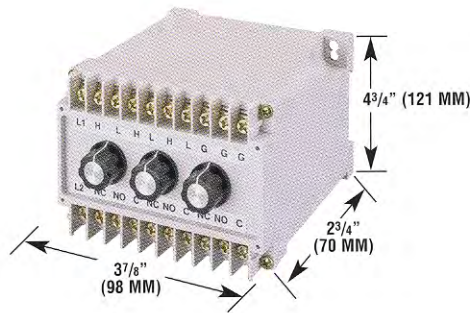
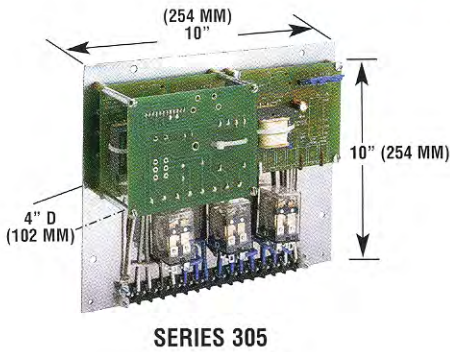


CHASSIS DIAGRAMS OF INDUSTRIALEVELINE™ LEVEL CONTROLS

SERIES: 101, 103, 104, 201, 202, 205, 301, 302, 303, 304, 101-TD, 101-2FC, 201-2FC, 207

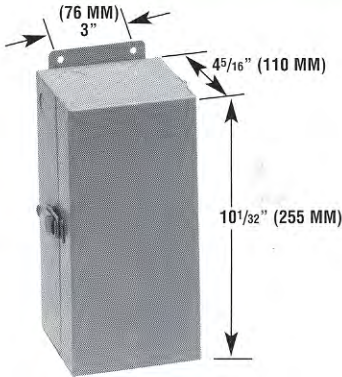


SERIES: 305, 404, 102-T, 201-T, 307, 407, AND 601

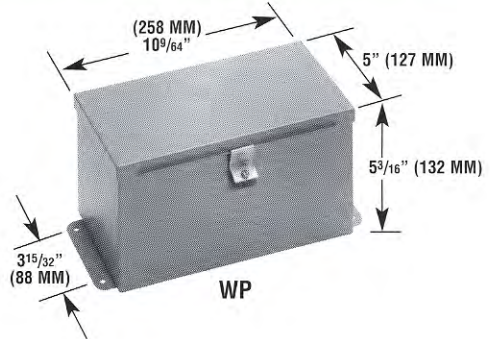


DIMENSIONS OF INDUSTRIALEVELINE™ ENCLOSURES

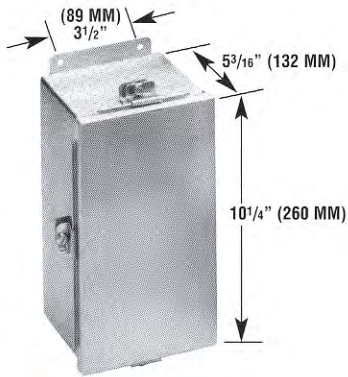
DIMENSIONS OF STANDARD ENCLOSURES INCLUDING NEMA 7



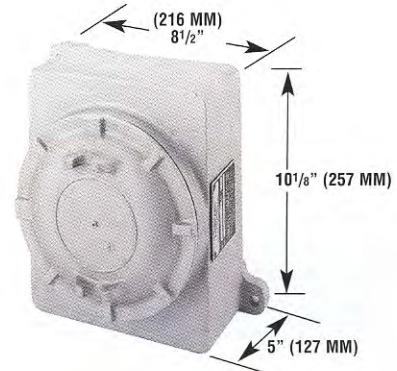
STANDARD NEMA 1



WP

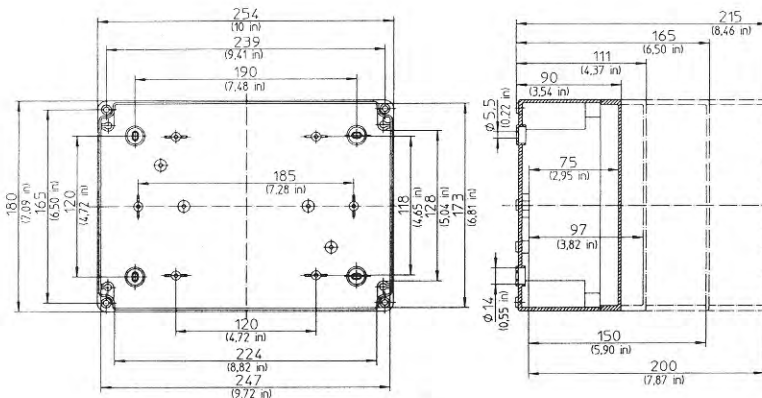


SWP



**EXPLOSION TYPE NEMA 7 (N7)
USED FOR SERIES 101 THROUGH 207**

For special enclosures used to house controls with motor starters and/or multiple accessories, consult the factory.



PWP

Various sizes available

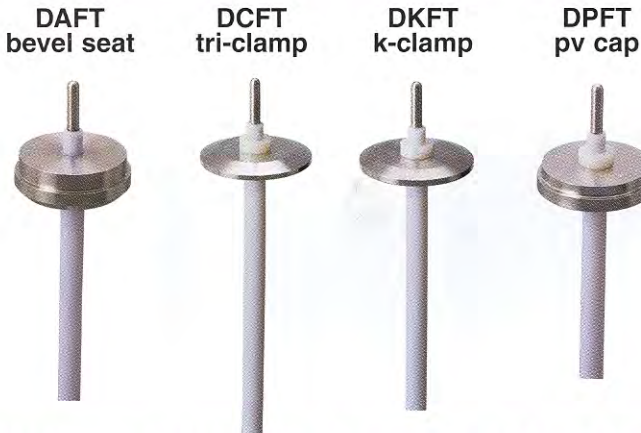


LUMENITE SANITRODES™ SINGLE LEVEL SANITARY PROBE AND JACK CABLE ASSEMBLIES USED WITH ALL SINGLE LEVEL CONTROLS



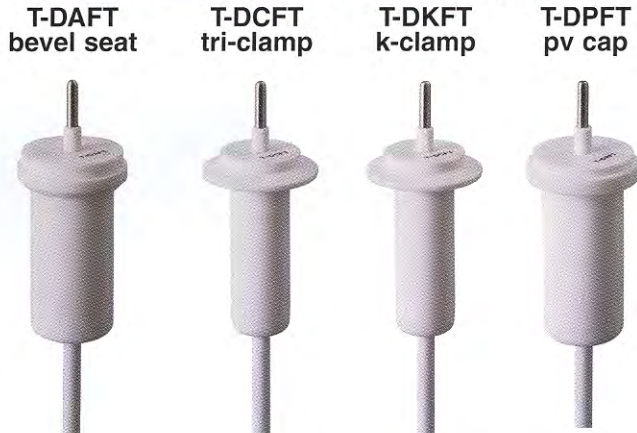
STANDARD SANITRODES

WITH S.S. CAP AND TEFLON INSULATED PROBE



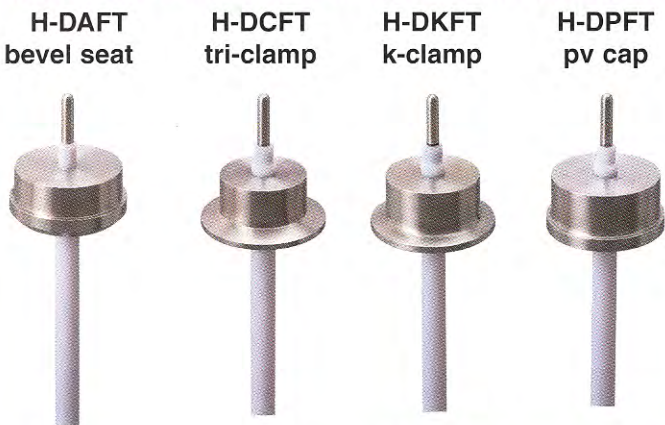
T-SERIES SANITRODES

WITH ALL TEFLON CONSTRUCTION-PREFIX T
For ultra sanitary pharmaceutical applications.

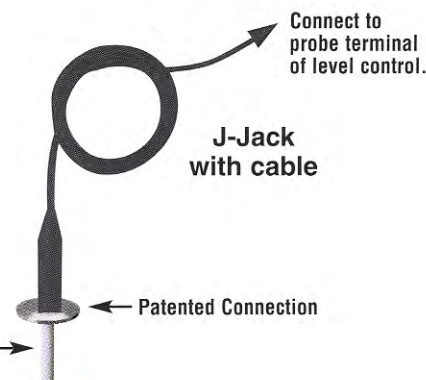


H-SERIES HEAVY DUTY SANITRODES

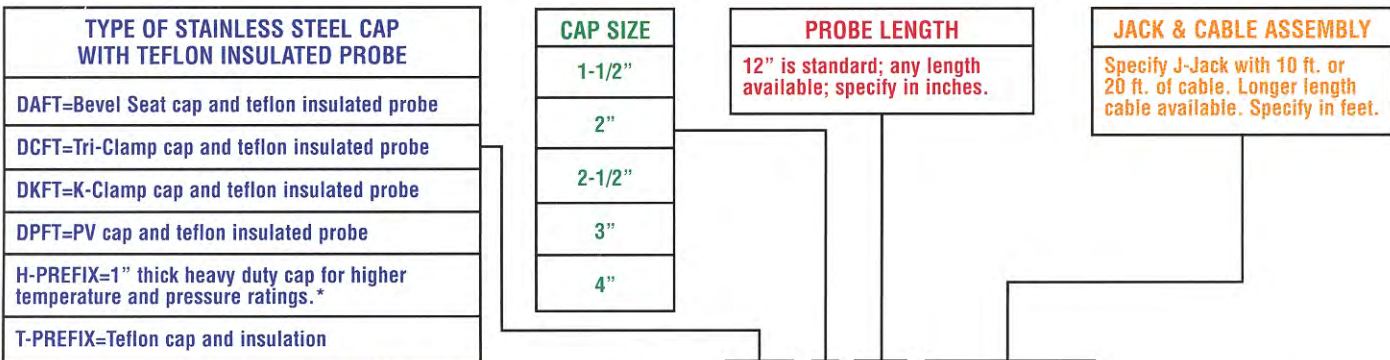
WITH 1" THICK S.S. CAP AND TEFLON INSULATED PROBE-PREFIX H



NOTE: For all sanitrodes, the temperature rating at 5-10 psi is 500°F. For simultaneous high temperature and pressure applications or for wide temperature cycling situations, consult the factory.



SPECIFICATION AND ORDERING CODE



* For special simultaneous high temperature and pressure ratings, i.e. 500°F and 500psi, consult the factory.

EXAMPLE: DCFT 2" - 12" - J - jack - 20 ft = Type DCFT 2" tri-clamp

sanitrode with 12" teflon insulated probe, 2" tri-clamp tank connection and J-jack with 20 ft. of cable.

Note: For heavy duty 1" thick cap, specify H-DCFT2" etc. For teflon cap and insulation, specify T-DCFT2" etc.

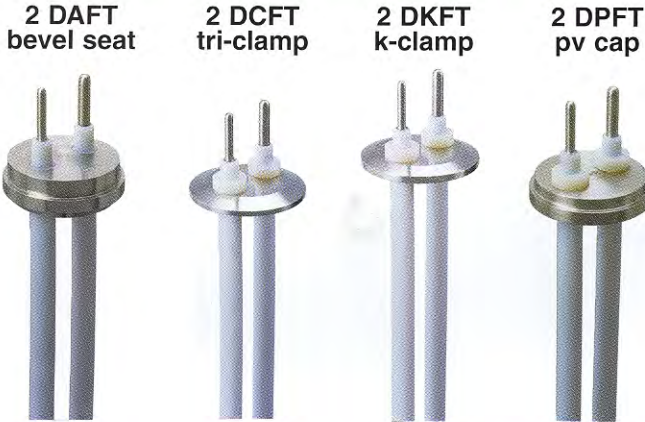


LUMENITE SANITRODES™ TWO LEVEL SANITARY PROBE AND JACK CABLE ASSEMBLIES USED WITH ALL TWO LEVEL CONTROLS



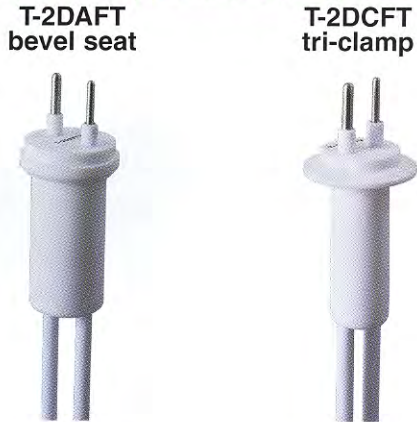
STANDARD SANITRODES

WITH S.S. CAP AND TEFLON INSULATED PROBES



T-SERIES SANITRODES

WITH ALL TEFLON CONSTRUCTION-PREFIX T
For ultra sanitary pharmaceutical applications.



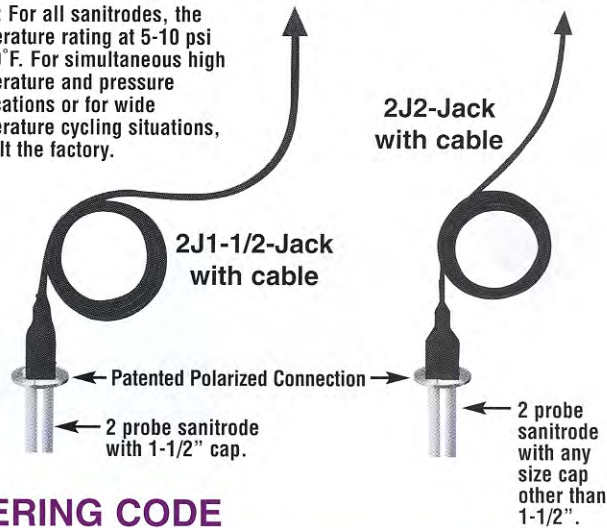
H-SERIES HEAVY DUTY SANITRODES

WITH 1" THICK S.S. CAP AND TEFLON INSULATED PROBES-PREFIX H



NOTE: For all sanitrodes, the temperature rating at 5-10 psi is 500° F. For simultaneous high temperature and pressure applications or for wide temperature cycling situations, consult the factory.

Connect to level control probe terminals.



SPECIFICATION AND ORDERING CODE

TYPE OF STAINLESS STEEL CAP WITH TWO TEFLON INSULATED PROBES
2 DAFT=Bevel Seat cap and teflon insulated probes
2 DCFT=Tri-Clamp cap and teflon insulated probes
2 DKFT=K-Clamp cap and teflon insulated probes
2 DPFT=PV cap and teflon insulated probes
H-PREFIX=1" thick heavy duty cap for higher temperature and pressure applications.*
T-PREFIX=Teflon cap and insulation

CAP SIZE
1-1/2"
2"
2-1/2"
3"
4"

PROBE LENGTHS
12" and 24" are standard; any length available; specify in inches.

JACK & CABLE ASSEMBLY
Specify 2J 1-1/2"-Jack with 10 ft. or 20 ft. cable for 1-1/2" size cap. For all other size caps, specify 2J2-Jack with 10 ft. or 20 ft. cable. Any length cable may be specified in feet.

* For special simultaneous high temperature and pressure ratings, i.e. 500° F and 500psi, consult the factory.

EXAMPLE: 2 DCFT 2"- 12" & 24" - 2J2 - jack - 40 ft = Type 2DCFT2"

tri-clamp sanitrode with 12" and 24" teflon insulated probes, 2" tri-clamp tank connection and 2J2-jack with 40 ft. of cable.

Note: For heavy duty 1" thick cap, specify H-2DCFT2" etc. For teflon cap and insulation, specify T-2DCFT2" etc.

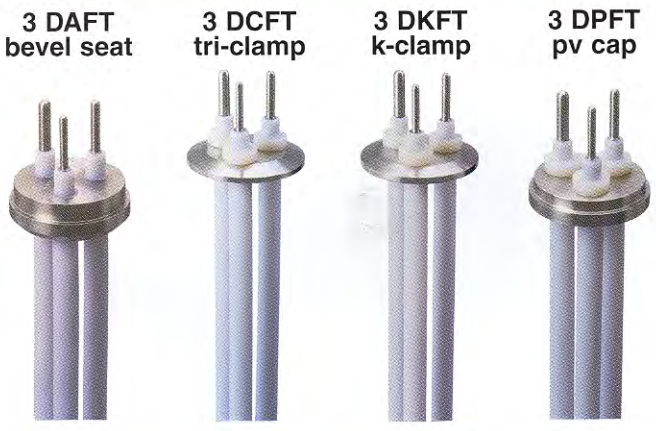


LUMENITE SANITRODES™ THREE LEVEL SANITARY PROBE AND JACK CABLE ASSEMBLIES USED WITH ALL THREE LEVEL CONTROLS



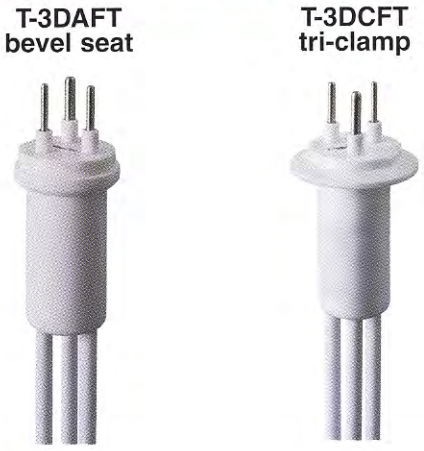
STANDARD SANITRODES

WITH S.S. CAP AND TEFLON INSULATED PROBES



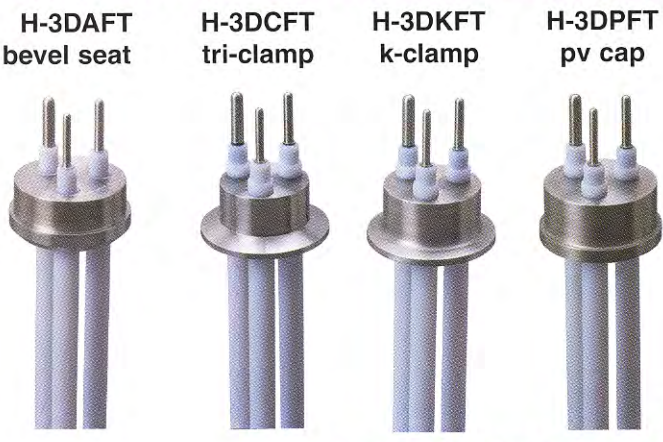
T-SERIES SANITRODES

WITH ALL TEFLON CONSTRUCTION-PREFIX T
For ultra sanitary pharmaceutical applications.



H-SERIES HEAVY DUTY SANITRODES

WITH 1" THICK S.S. CAP AND TEFLON INSULATED PROBES-PREFIX H



NOTE: For all sanitrodes, the temperature rating at 5-10 psi is 500°F. For simultaneous high temperature and pressure applications or for wide temperature cycling situations, consult the factory.



NOTE: Lumenite will fabricate special 4-Probe Sanitrodes and Jack Assemblies when required.

SPECIFICATION AND ORDERING CODE

TYPE OF STAINLESS STEEL CAP WITH THREE TEFLON INSULATED PROBES
3 DAFT=Bevel Seat cap and teflon insulated probes
3 DCFT=Tri-Clamp cap and teflon insulated probes
3 DKFT=K-Clamp cap and teflon insulated probes
3 DPFT=PV cap and teflon insulated probes
H-PREFIX=1" thick heavy duty cap for higher temperature and pressure applications.*
T-PREFIX=Teflon cap and insulation

CAP SIZE
2"
2-1/2"
3"
4"

PROBE LENGTHS
12", 18" and 24" are standard; any length available; specify in inches.

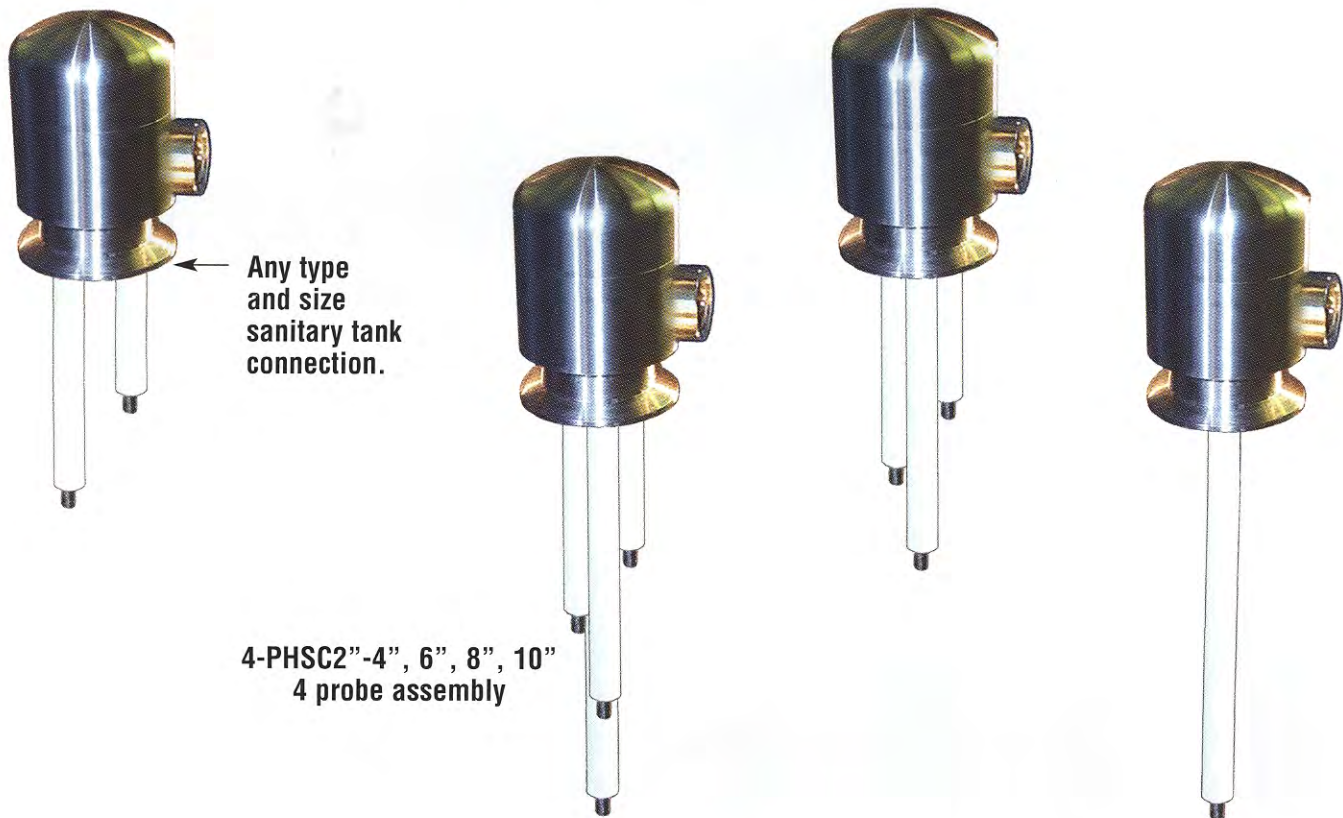
JACK & CABLE ASSEMBLY
Specify 3J-Jack with 10 ft. or 20 ft. of cable. Longer length cable available. Specify in feet.

* For special simultaneous high temperature and pressure ratings, i.e. 500°F and 500psi, consult the factory.

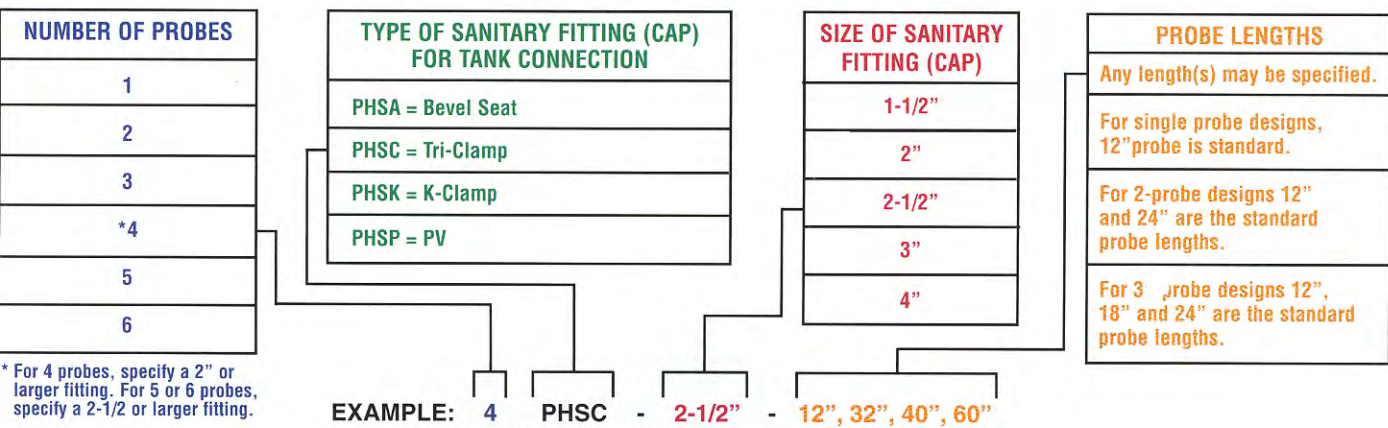
EXAMPLE: 3 DCFT 2"- 12", 18", & 24" - 3J - jack - 20 ft = Type 3DCFT2

tri-clamp sanitrode with 12", 18", and 24" teflon insulated probes, 2" tri-clamp tank connection and 3J-jack with 20 ft. of cable.
Note: For heavy duty 1" thick cap, specify H-3DCFT2" etc. For teflon cap and insulation, specify T-3DCFT2" etc.

Sanitary probe assemblies utilizing a stainless steel, seamlessly welded NEMA 4x housing, with every size and type of sanitary tank connection. All designs are both USDA and 3A listed.



SPECIFICATION AND ORDERING CODE

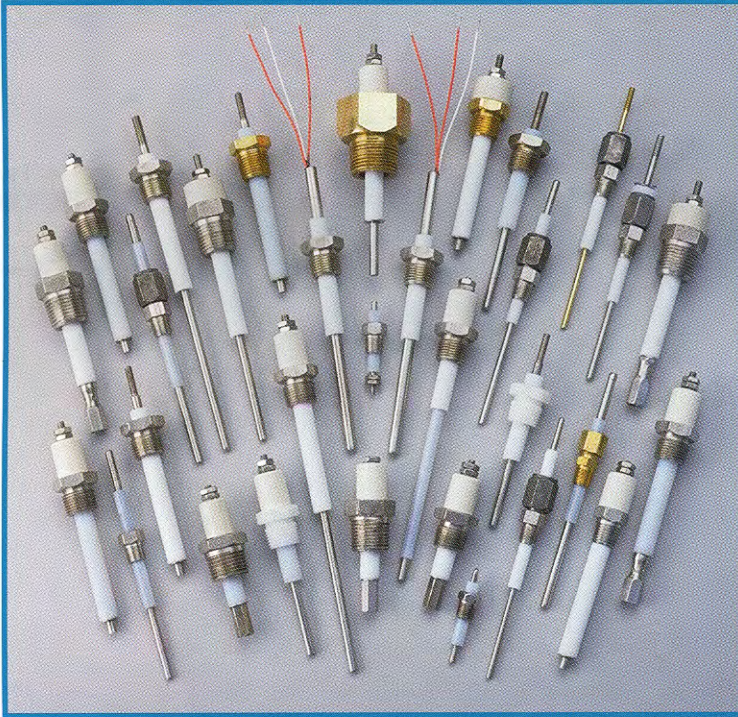


Type 4 PHSC 2-1/2" Sanidustrial™ Probe Assembly with 12", 32", 40" and 60" teflon insulated probes, 2-1/2" tri-clamp tank connection.



LUMENITE INDUSTRIAL SINGLE AND MULTI-LEVEL PROBE ASSEMBLIES

**SINGLE PROBE NPT DESIGNS
(INCLUDING RTD TEMPERATURE PROBES)**



**MULTI PROBE FLANGE DESIGN
WITH CABLE PROBES**



**MULTI PROBE FLANGE DESIGN
WITH SOLID PROBES**



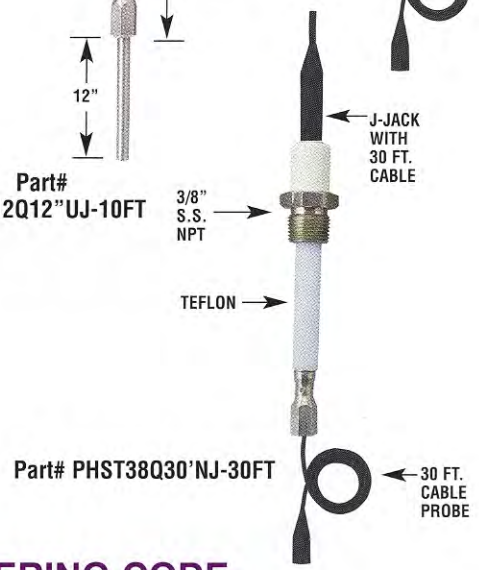
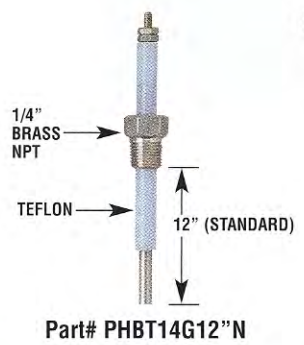
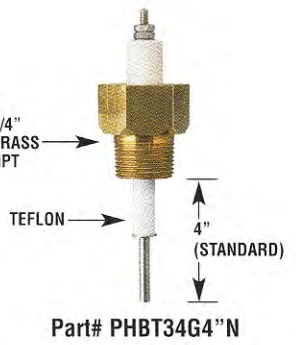
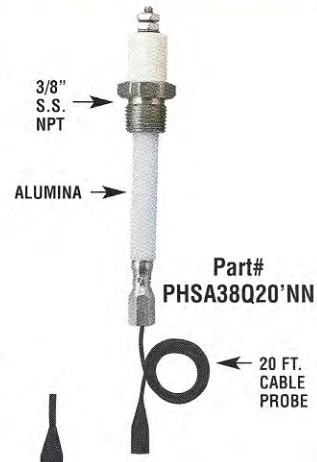
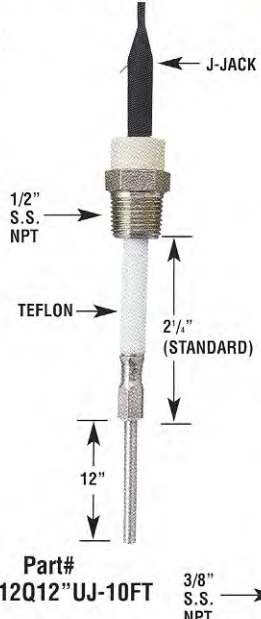
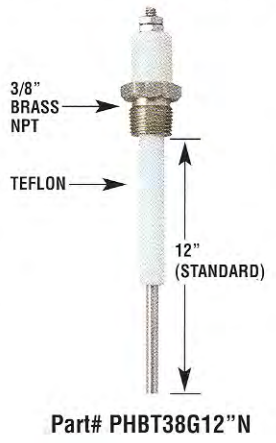
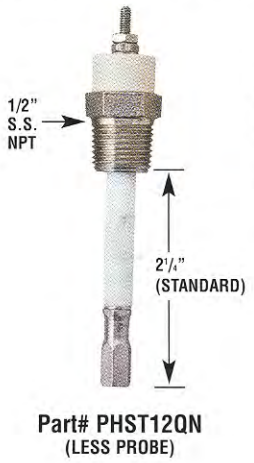
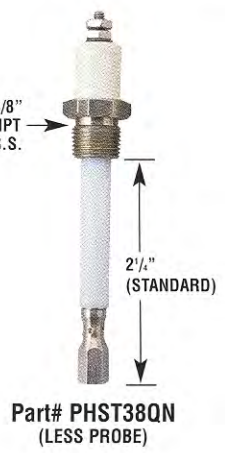
**MULTI PROBE
NPT DESIGN**





LUMENITE INDUSTRIAL SINGLE LEVEL PROBES AND PROBE HOLDERS

TYPICAL SIMULTANEOUS PRESSURE/TEMPERATURE RATINGS: 240 PSI AT 212°F STEAM.
FOR HIGHER SIMULTANEOUS PRESSURE/TEMPERATURE RATINGS, CONSULT THE FACTORY.



SPECIFICATION AND ORDERING CODE

A

PROBE HOLDER NPT MATERIAL
PHB=Brass NPT tank connection PHS=Stainless Steel NPT tank connection Consult factory for alternate materials

B

PROBE HOLDER INSULATION MATERIAL
A=Alumina B=Bakelite (Phenolic) T=Teflon

C

SIZE OF NPT FITTING
12=1/2" NPT 14=1/4" NPT 34=3/4" NPT 38=3/8" NPT

D

PROBE HOLDER PROBE CONNECTION
G=INTEGRAL ONE PIECE PROBE Q=Two Piece probe assembly with 1/4-20 female termination to accept separate 1/4-20 male threaded probe.

E

PROBE LENGTH
Specify solid probes in inches (up to 144 inches) Specify cable probes in feet, no limit

F

PROBE INSULATION
U=Uninsulated B=Bakelite T=Teflon N=Neoprene for cable probes only

G

PROBE TO CONTROL WIRE CONNECTION
N=Screw and locknut J=Waterproof jack & cable

H

Probe to control cable length. Specify in feet, if using Lumenite cable.
--

ETC

EXAMPLE: **A** **B** **C** **D** **E** **F** **G** **H** =
 PHS T 38 Q U 36" J 20ft.

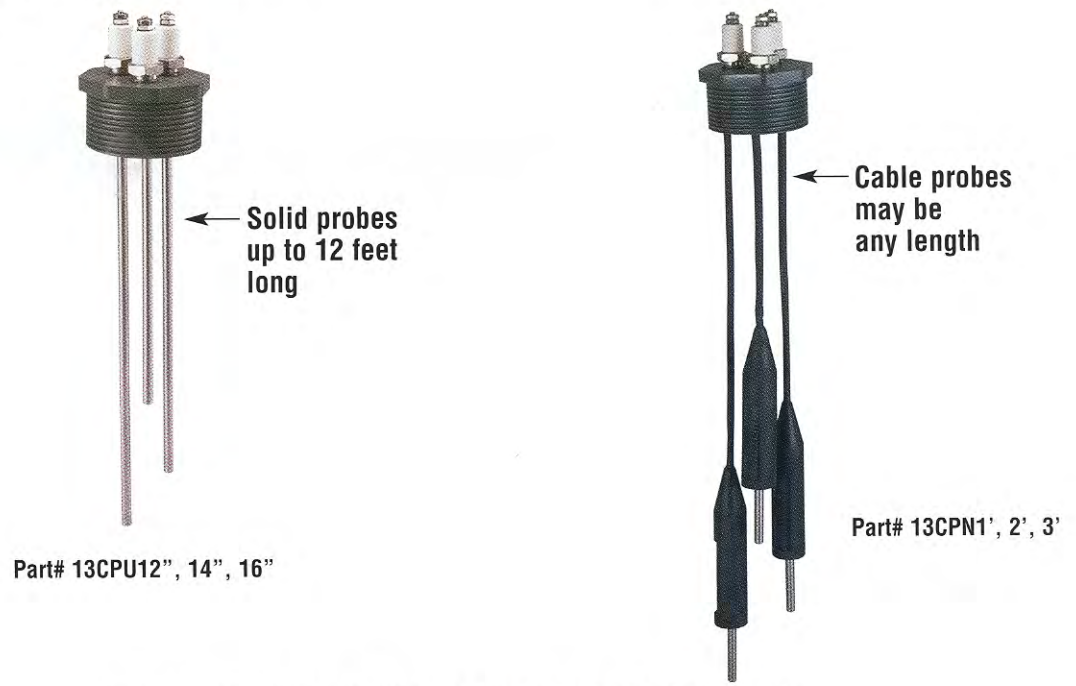
Probe Assembly consisting of a teflon insulated probe holder with 3/8" NPT stainless steel tank connection, female threaded end to accept 1/4"-20-male threaded uninsulated 36" probe, connected to the level control with a waterproof J-jack and 20 ft. cable.
 **Unless otherwise specified, probes are fabricated from 1/4" diameter 304 S.S. Alternate probe materials include 316 S.S., Hastelloy C, Titanium and others.



LUMENITE INDUSTRIAL MULTI-LEVEL PROBES AND PROBE HOLDERS

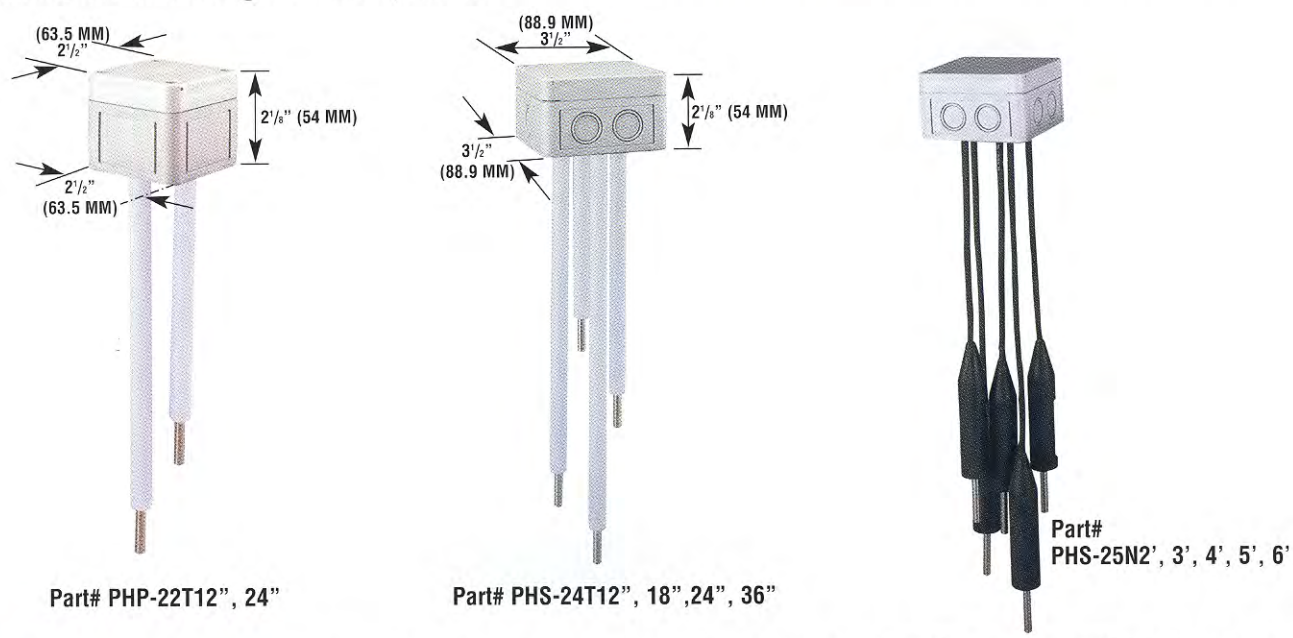
INDUSTRIAL DUTY DESIGNATION — 1

Polycarbonate or stainless steel NPT plugs with 1 to 4 solid or cable type probes, 200°F and 250 PSI temperature/pressure rating.



INDUSTRIAL DUTY DESIGNATION — 2

Polycarbonate or stainless steel NEMA 4x waterproof/corrosion resistant probe holders for general purpose use, for up to 10 solid probes or 15 cable probes. 200°F/250 PSI temperature/pressure rating with stainless steel housing and solid probes.





LUMENITE INDUSTRIAL MULTI-LEVEL PROBES AND PROBE HOLDERS

INDUSTRIAL DUTY DESIGNATION — 3

Polycarbonate or stainless steel NEMA 4x waterproof and corrosion resistant probe holders, with polycarbonate or stainless steel 150# or 300# flanges, for up to 10 solid probes or 15 cable probes. 500°F temperature rating when equipped with solid probes, stainless steel housing, and flange.



Part# PHP-32EP15T12", 24"



Part# PHP-34FP15T12", 18", 24", 36"



Part# PHP-35FP15N2', 3', 4', 5', 6'

INDUSTRIAL DUTY DESIGNATION — 4

Polycarbonate or stainless steel NEMA 4x waterproof/corrosion resistant probe holders with polycarbonate or stainless steel NPT tank connection, for up to 8 solid or cable probes. Temperature/pressure rating of 250°F/2000PSI when equipped with alumina insulated series probes, mounted through stainless steel housing, see page 25.



Part# PHS-43CSU12", 18", 24"



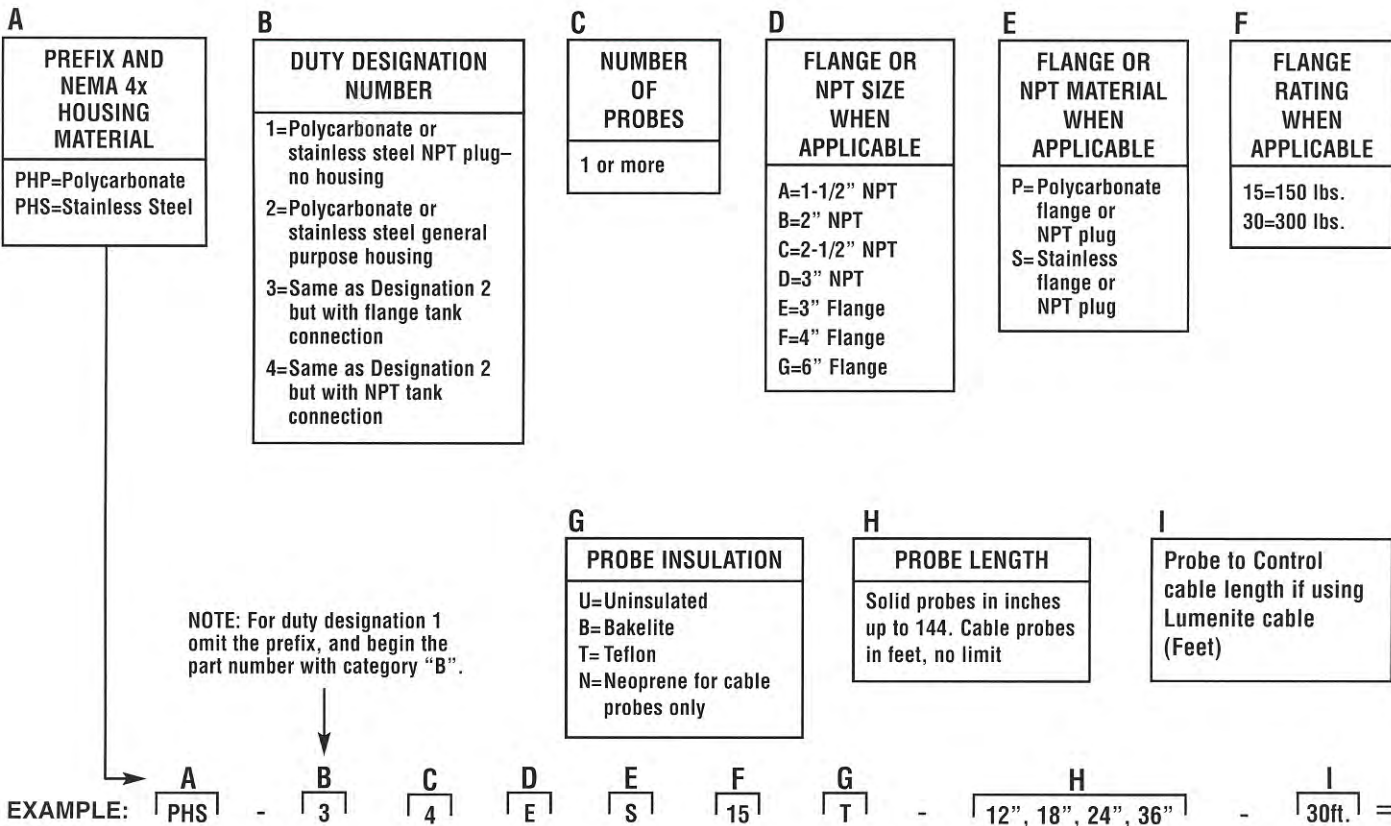
Part# PHS-44DST12", 18", 24", 36"



Part# PHP-43CPN1', 2', 3'

SPECIFICATION AND ORDERING CODE FOR INDUSTRIAL MULTI-PROBE ASSEMBLIES, DUTY DESIGNATIONS 1, 2, 3, AND 4

NOTE: Unless otherwise specified, probes are fabricated from 1/4" diameter 304 S.S.



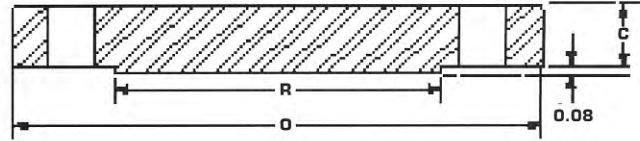
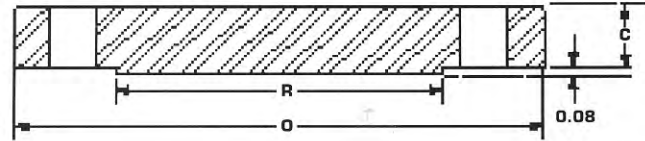
Probe assembly consisting of stainless steel NEMA 4x housing mounted to a 3" 150 lb. stainless steel flange, with 12", 18", 24" and 36" teflon insulated probes, and 30 feet of 4 conductor cable.

EXAMPLE 2: PHP - 43 CPT-12", 24", 48" - 20 ft. = Probe assembly consisting of polycarbonate NEMA 4x housing mounted to a 2-1/2" NPT polycarbonate plug, with 12", 24" and 48" teflon insulated probes and 20 feet of 3 conductor cable. Unless otherwise specified, the probe material is 304 S.S. Alternate probe materials include 316 S.S., Hastelloy C, Titanium, and others.

LUMENITE FLANGES

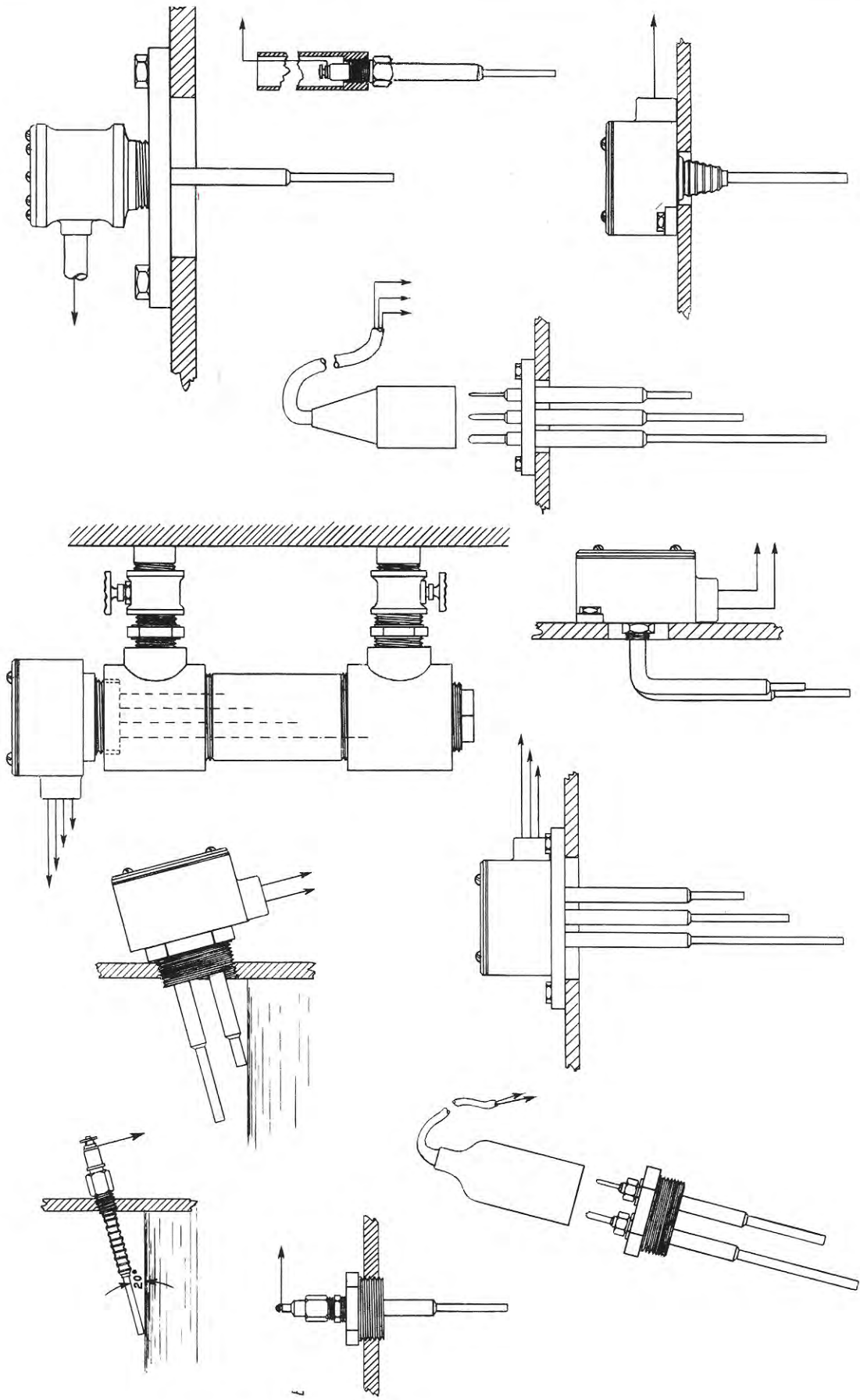
FLANGES – 150 lbs.

FLANGES – 300 lbs.



Nominal Size	Common Dimensions		
	Outside Dia. O	Thk C	Raised Face Dia. R
1/2	3.50	0.44	1.38
3/4	3.88	0.50	1.69
1	4.25	0.56	2.00
1-1/4	4.63	0.63	2.50
1-1/2	5.00	0.69	2.88
2	6.00	0.75	3.63
2-1/2	7.00	0.88	4.13
3	7.50	0.94	5.00
3-1/2	8.50	0.94	5.50
4	9.00	0.94	6.19
5	10.00	0.94	7.31
6	11.00	1.00	8.50

Nominal Size	Common Dimensions		
	Outside Dia. O	Thk C	Raised Face Dia. R
1/2	3.75	0.56	1.38
3/4	4.63	0.63	1.69
1	4.88	0.69	2.00
1-1/4	5.25	0.75	2.50
1-1/2	6.13	0.81	2.88
2	6.50	0.88	3.63
2-1/2	7.50	1.00	4.13
3	8.25	1.13	5.00
3-1/2	9.00	1.19	5.50
4	10.00	1.25	6.19
5	11.00	1.38	7.31
6	12.50	1.44	8.50



LUMENITE CONTROL TECHNOLOGY, INC.
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VARIOUS INSTALLATIONS OF LUMENITE PROBE HOLDERS.
 (ORIGINAL HAND DRAWINGS BY LUMENITE FOUNDER, GEORGE V. CALABRESE)



**SERIES 102-T MULTI-TANK
SIGNAL CONTROL**



SERIES 404
(Shown in Din Rail Panel Mount)



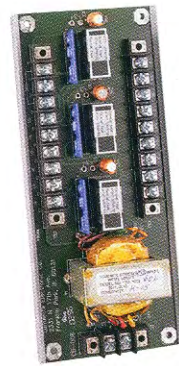
**MLXT-4220-F3
INDUSTRIAL
TRANSMITTER**



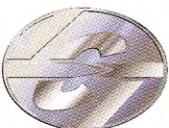
**MLST-4220
SANITARY
TRANSMITTER**



**SERIES 407
THREE PUMP ALTERNATOR**



**SERIES 601
UP TO 6 LEVEL CONTROL
3" TRACK MOUNT**



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