TORNATECH

Project: _____

Customer: _____

Engineer: _____

Pump Manufacturer: _____

Technical Data
Submittal Document

GPx Foam Series
Full Service
Electric Additive (Foam) Pump Controller

Contents:
Data Sheets
Dimensional Data
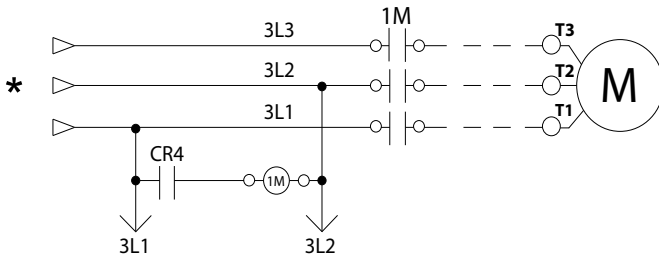Wiring Schematics
Field Connections

Note: The drawings included in this package are for controllers covered under our standard offering. Actual AS BUILT drawings may differ from what is shown in this package.
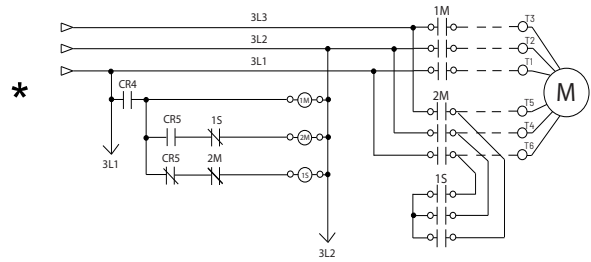
Select starting method

Model GPA
Across the line

Model GPY
Wye-Delta Open

*From normal incoming power through Disconnecting Means (IS/CB)

March 2024

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Manufacturer reserves the right to modify this information without notice

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Standard, Listings, Approvals and Certifications	**Built to NFPA 20**			
	Underwriters Laboratory (UL)	UL218 - Fire Pump Controllers		
	FM Global	Class 1321/1323		
	CE Mark	Various EN, IEC & CEE directives and standards		
	Built in Canada or U.A.E	Built in Europe		
	CE Mark Option	Supplied as Standard		
Enclosure	**Protection Rating**			
	Built in Canada or U.A.E	Built in Europe		
	Standard: NEMA 2	Standard: IP55		
	Optional			
	NEMA 12	NEMA 4X-304 sst painted		IP54
	NEMA 3	NEMA 4X-304 sst brushed finish		IP55
	NEMA 3R	NEMA 4X-316 sst painted		IP65
	NEMA 4	NEMA 4X-316 sst brushed finish		IP66
	Accessories • Bottom entry gland plate • Lifting Lugs • Keylock handle	**Paint Specifications** • Red RAL3002 • Powder coating • Glossy textured finish		

Additive (Foam) Pump Controllers	**Choose one of the following configurations:** A8 - Additive (Foam) pump controller / non pressure actuated without pressure transducer and run test solenoid valve A8A - Additive (Foam) pump controller with pressure transducer and run test solenoid valve A8B - Additive (Foam) pump controller with pressure transducer and run test solenoid valve in stainless steel
	Add any of the following options if required: D40 - Dump valve circuitry, 24VDC Max2A Cx79 - Low foam additive level complete with visual indication and alarm contact (DPDT) Cx081 - Provision for proof pressure switch for low additive pressure complete with visual indication and alarm contact. (Proof pressure switch provided by others.)

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Shortcircuit Withstand Rating	200V to 208V 60Hz	220V to 240V 60Hz	380V to 415V 50 Hz / 60Hz	440V to 480V 60Hz	575V to 600V 60Hz
	HP (kw)				
Standard 100kA	5 - 150 (3.7 - 110)	5 - 200 (3.7 - 149)	5 - 300 (3.7 - 223)	5 - 400 (3.7 - 298)	N/A
Optional 150kA					
Standard 50kA	200 (149)	250 (186)	350 - 450 (261 - 335)	450 - 500 (335 - 373)	5 - 500 (3.7 - 373)
Optional 100kA	N/A	N/A	350 - 500 (261 - 373)	450 - 500 (335 - 373)	
Optional 200kA	5 - 150 (3.7 - 110)	5 - 200 (3.7 - 149)	5 - 300 (3.7 - 223)	5 - 400 (3.7 - 298)	N/A

Ambient Temperature Rating	**Standard**: **Optional**: 4°C to 40°C / 39°F to 104°F 4°C to 55°C / 39°F to 131°F Controllers built in Dubai, UAE (Tornatech FZE) are supplied standard with 55°C rating.
Surge Suppression	Surge arrestor rated to suppress surges above line voltage

Disconnecting Means	• Isolating switch and circuit breaker assembly:
	   - Door interlocked in the ON position
	   - Isolating switch rated not less than 115% of motor full load current
	   - Circuit breaker continuous rating not less than 115% of motor full load current
	   - Overcurrent sensing non-thermal type, magnetic only
	   - Instantaneous trip setting of not more than 20 times the motor full load current
	• Common flange mounted operating handle

Service Entrance Rating	Suitable as service entrance equipment
Emergency Start Handle	• Flange mounted • Integrated limit switch • Pull and latch activation • Across the line start (direct on line)
Locked Rotor Protector	• Operate shunt trip to open circuit breaker • Trip between 8 and 20 seconds • Factory set at 600% of motor full load current
Electrical Readings	• Voltage phase to phase (normal power) • Amperage of each phase when motor is running
Pressure Readings	• Continuous system pressure display • Cut-in and Cut-out pressure settings
Pressure and Event recorder	• Pressure readings with date stamp • Event recording with date stamp • Under regular maintained operation, events are stored in memory for the life of the controller. • Data viewable on operator interface display screen • Downloadable by USB port to external memory device
Pressure Sensing	• Pressure transducer and run test solenoid valve assembly for fresh water application • Pressure sensing line connection 1/2" Female NPT • Drain connection 3/8" • Rated for 0-500PSI working pressure (standard display at 0-300PSI) • Externally mounted with protective cover

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Audible Alarm	Alarm buzzer - 85dB at 3 meters
Visual Indications	• Power available • Deluge valve start • Pump on demand/Automatic start • Motor run • Remote automatic start • Pump room temperature (ºF or ºC) • Periodic test • Remote manual start • Lockout • Manual start • Emergency start
Visual & Audible Alarms	Visual • Control voltage not healthy • Overcurrent • Pump on demand • Invalid cut-in • Overvoltage • Pump room alarm • Lock rotor current • Phase loss L1 • Service required • Loss of power • Phase loss L2 • Undercurrent • Low ambient temperature • Phase loss L3 • Undervoltage • Low water level • Phase unbalanced • Check weekly test solenoid • Motor trouble • Pressure transducer fault detected • Weekly test cut-in reached • Phase reversal (normal power) Visual and audible • Fail to start

Remote Alarm Contacts	DPDT-8A-250V.AC
	     • Power available
	     • Phase reversal
	     • Motor run
	     • Common pump room alarm (field re-assignable)**
	         • Overvoltage
	         • Undervoltage
	         • Phase unbalance
	         • Low pump room temperature
	         • High Pump room temperature
	     • Common motor trouble (field re-assignable)**
	         • Overcurrent
	         • Fail to start
	         • Undercurrent
	         • Ground fault
	     • Free (field programmable)**

**Tornatech reserves the right to use any of these three alarm points for special specific application requirements.

ViZiTouch V2.1 Operator Interface	• Embedded microcomputer with software PLC logic • 7.0" color touch screen (HMI technology) • Upgradable software • Multi-language		
Communication Protocol Capability	• Protocol: Modbus • Connection type: Shielded female connector RJ45 • Frame Format: TCP/IP • Addresses: See bulletin MOD-GPx		
Operation	**Automatic Start**	• Start on pressure drop • Remote start signal from automatic device • Deluge valve start	
	Manual Start	• Start pushbutton • Run test pushbutton • Remote start from manual device	
	Stopping	• Manual with Stop pushbutton • Automatic after expiration of minimum run timer ***	
	Timers	Field Adjustable & Visual Countdown	• Minimum run timer ***(off delay) • Sequential start timer (on delay) • Periodic test timer
	Actuation	Visual Indication	• Pressure • Non-pressure
	Mode		• Automatic • Non-automatic

***Can only be used if approved by the AHJ

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A4	Flow switch provision	C19	Emergency start alarm contact (DPDT)
A9	Low zone pump control function	C20	Manual start alarm contact (DPDT)
A10	Middle zone pump control function	C21	Deluge valve start alarm contact (DPDT)
A11	High zone pump control function	C22	Remote automatic start alarm contact (DPDT)
A13	Non-pressure actuated controller w/o pressure transducer and run test solenoid valve	C23	Remote manual start alarm contact (DPDT)
A16	Lockout/interlock circuit from equipment installed inside the pump room	C24	High pump room temperature alarm contact (DPDT)
B11	Built in alarm panel (120V.AC supervisory power) providing indication for: • Audible alarm & silence pushbutton for motor run, phase reversal, loss of phase. • Pilot lights for loss of phase & supervisory power available	C25	Second set of standard alarm contacts (DPDT) (Typical for city of Los Angeles and Denver)
		Cx	Additional visual and alarm contact (Specify function) (DPDT)
		D1	Low suction pressure transducer for fresh water rated at 0-300PSI with visual indication and alarm contact
B11B	Built in alarm panel same as B11 but 220-240VAC supervisory power	D1A	Low suction pressure transducer for sea water rated at 0-300PSI with visual indication and alarm contact
B19A	High motor temperature c/w thermoster relay and alarm contacts (DPDT)	D5	Pressure transducer and run test solenoid valve for fresh water rated for 0-500PSI (for factory calibration purposes only)
B19B	High motor temperature c/w PT100 relay and alarm contacts (DPDT)	D5D	Pressure transducer and run test solenoid valve for sea water rated for 0-500PSI
B21	Ground fault alarm detection c/w visual indication and alarm contact (DPDT)	D10	Omit mounting feet (when applicable)
C1	Extra motor run alarm contact (DPDT)	D13	High withstand rating for: • 200V to 208V @ 150HP max. = 150kA* • 200V to 208V @ 200HP = 100kA* • 220V to 240V @ 200HP max. = 150kA* • 220V to 240V @ 250HP = 100kA* • 380V to 415V @ 300HP max. = 150kA* • 380V to 415V @ 350HP to 450HP = 100kA* • 440V to 480V @ 400HP max. = 150kA* • 440V to 480V @ 450HP to 500HP = 100kA* • 600V @ 500HP max. = 100kA*
C4	Periodic test alarm contact (DPDT)		
C6	Low discharge pressure alarm contact (DPDT)		
C7	Low pump room temperature alarm contact (DPDT)		
C10	Low water reservoir level alarm contact (DPDT)		
C11	High electric motor temperature alarm contact (DPDT)		
C12	High electric motor vibration c/w visual indication and alarm contact (DPDT)		
C14	Pump on demand / automatic start alarm contact (DPDT)	D13A	High withstand rating for: • 380V to 480V = 65kA* • 600V = 25kA*
C15	Pump fail to start alarm contact (DPDT)	D13B	High withstand rating for: • 200V to 208V @ 150HP max. = 200kA* • 220V to 240V @ 200HP max. = 200kA* • 380V to 415V @ 300HP max. = 200kA* • 440V to 480V @ 400HP max. = 200kA*
C16	Control voltage healthy alarm contact (DPDT)		
C17	Flow meter valve loop open c/w visual indication and alarm contact (DPDT)	D14	Anti-condensation heater & thermostat
C18	High water reservoir level c/w visual indication and alarm contact (DPDT)	D14A	Anti-condensation heater & humidistat
		D14B	Anti-condensation heater & thermostat & humidistat

*For fire pump controller section only.
Note: Options chosen from this page are not electrically represented on the wiring schematics in this submittal package.

D15	Tropicalization	
D18	CE Mark with factory certificate	
D26	Modbus with RTU frame format and RS485 connection	
D27	Motor heater connection (external single phase power source and heater on/off contact)	
D27A	Motor heater connection (internal single phase power source and heater on/off contact)	
D28	Customized drawing set	
D34A	Field programmable I/O board - 5 Input / 5 output	
D43	Seismic Certification compliant to CBC 2019, IBC 2018 rigid base/wall mounted only	
D44	Special Seismic Certification compliant to OSHPD rigid base/wall mounted only	

L01	Other language and English (bilingual)
L02	French
L03	Spanish
L04	German
L05	Italian
L06	Polish
L07	Romanian
L08	Hungarian
L09	Slovak
L10	Croatian
L11	Czech
L12	Portuguese
L13	Dutch
L14	Russian
L15	Turkish
L16	Swedish
L17	Bulgarian
L18	Thai
L19	Indonesian
L20	Slovenian
L21	Danish
L22	Greek
L23	Arabic
L24	Hebrew
L25	Chinese

Additional Options:

_____

_____

_____

_____

_____

Note: Options chosen from this page are not electrically represented on the wiring schematics in this submittal package.

ViZiTouch V2.1 Operator Interface
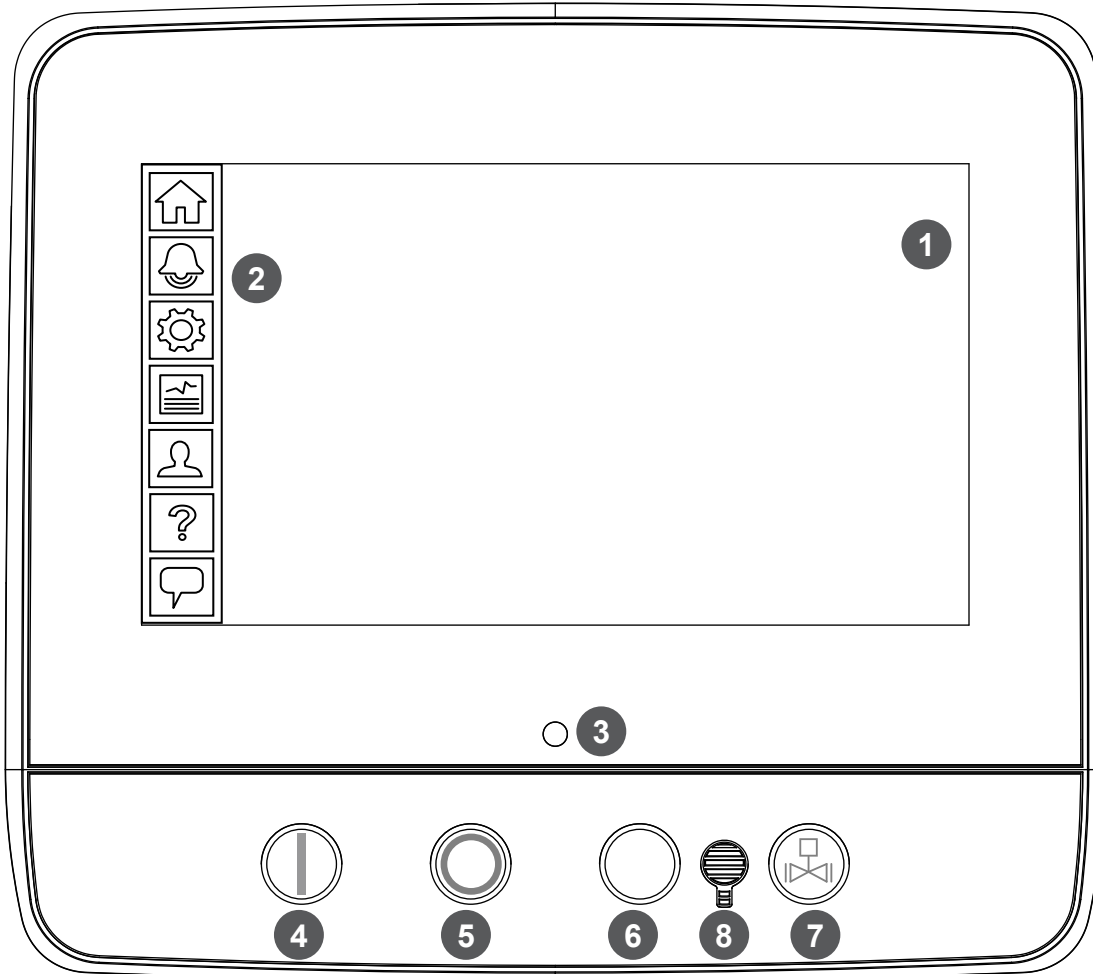
1 - Color touch screen
2 - Onscreen menu
   • HOME page
   • ALARM page
   • CONFIGURATION page
   • HISTORY page
   • SERVICE page
   • MANUAL page
   • LANGUAGES page

3 - Power LED (3 colors)
4 - START button
5 - STOP button
6 - Not Used
7 - RUN TEST button
8 - Alarm buzzer

1/2" [12] 21 7/8" [554]
18" [457]
Ø7/8" [Ø23] X2

69 1/8" [1756]
68" [1727]

39 1/4" [998]
36" [914]
34 1/2" [876]
Ø3/8" [Ø10] X4

See Notes

65 7/8" [1673]

Optional

28 3/8" [720]
22 3/4" [576]
33 5/8" [854]

1" [25] Adjustable Feet

Sensing Line Connection - 1/2 " F.NPT

Drain - 3/8 " M.TUBE
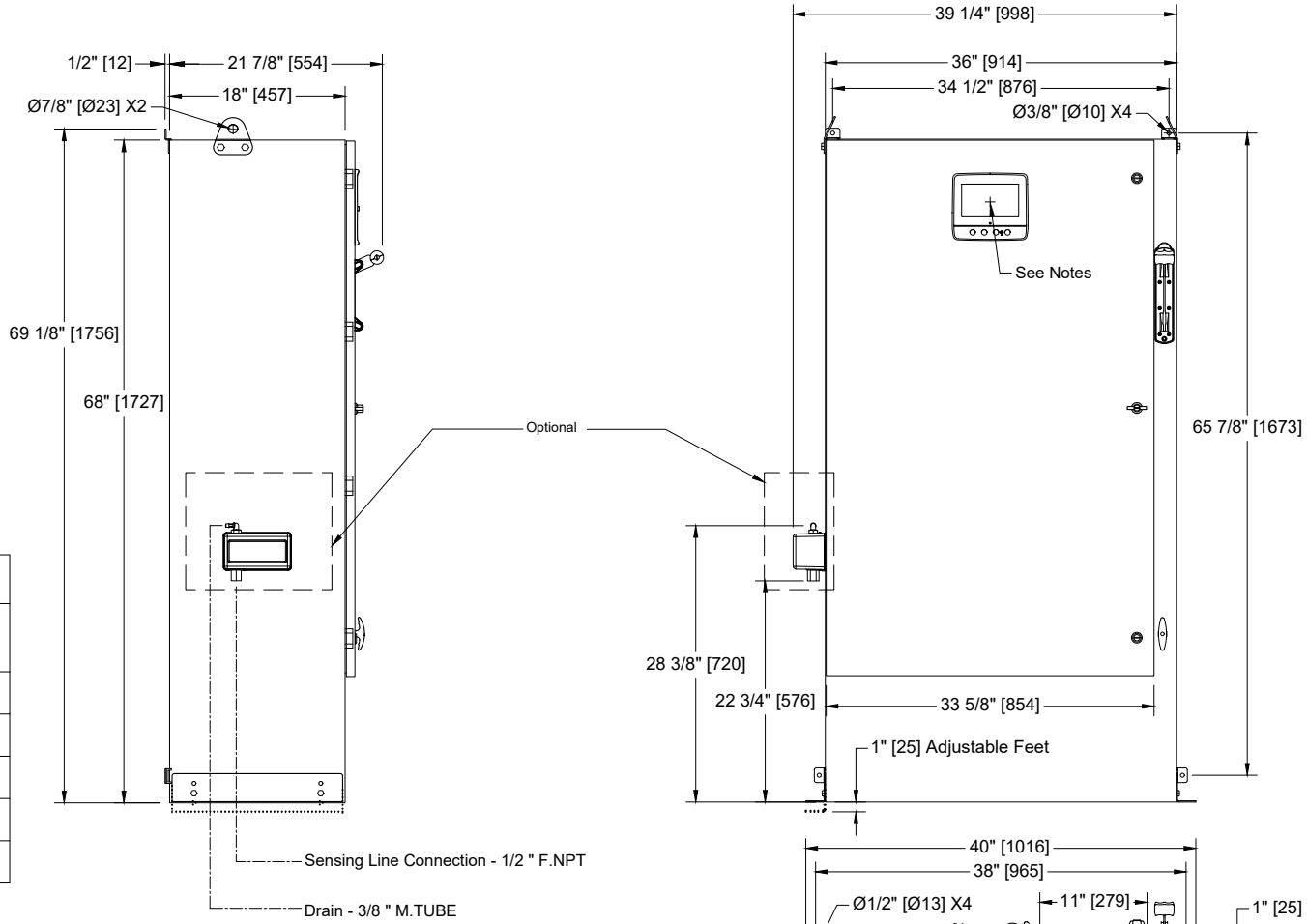
Voltage / Power Table		
Voltage	Min HP	Max HP
208	75	150
220 - 240	100	200
380 - 400 - 415	150	300
440 - 480	200	400
600	250	500

40" [1016]
38" [965]
Ø1/2" [Ø13] X4
11" [279]
1" [25]

11 1/8" [284]
11" [279]

Normal Power and Motor Leads Entrance

16" [406]

Optional

3 1/2" [89]
3" [76]
1 1/4" [31]
1" [25]

Notes:

- Standard: NEMA 2
- Standard paint : textured red RAL 3002.
- All dimensions are in inches [millimeters].
- Center of screen: 61-5/8" [1564]from bottom.
- Bottom conduit entrance through removable gland plate recommended.
- Use watertight conduit and connector only.
- Protect equipment against drilling chips.
- Door swing equal to door width.

MODEL:GPA

ELECTRIC ADDITIVE (FOAM) PUMP CONTROLLER
FULL VOLTAGE / ACROSS THE LINE

BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70

NYC Dpt of Building Approved

DRAWING NUMBER
GPA-WS870/E
DWG REV. 0
SHEET 1 OF 2

IS1

L3 — 1L3
L2 — 1L2
L1 — 1L1

SA1

CB1 — ST1 → 4 To J45 (P.2 / F4) → 2

VMB1

VIZi TOUCH

To I/O Electric Board UP (P.2 / E2)

J14 J8 J5

+	-	DI0	COM	DI1	COM	DI2	COM	DI3	COM

3L1
3L2
3L3
To J2/J3/J4 (P.2/F8)

1M

3L3
3L2
3L1

17

CR4

3L1 (P.2/E8)

CT3 68 Black
      69 White
CT2 66 Black
      67 White   To J76   (P.2/F6)
CT1 64 Black
      65 White

1M**

T1 T2 T3

M

	Legend	
1M	Contactor	
AB	Alarm Bell	
CB	Circuit Breaker	
CR	Control Relay	
CT	Current Transformer	
EB	Electric I/O Board	
IS	Isolating Switch	
J	Jumper	
LS	Limit Switch	
PT	Pressure Transducer	
SA	Surge Arrester	
ST	Shunt Trip	
SV	Solenoid Valve	
VMB	Main Board	
XTR	Transformer	

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MODEL: GPA

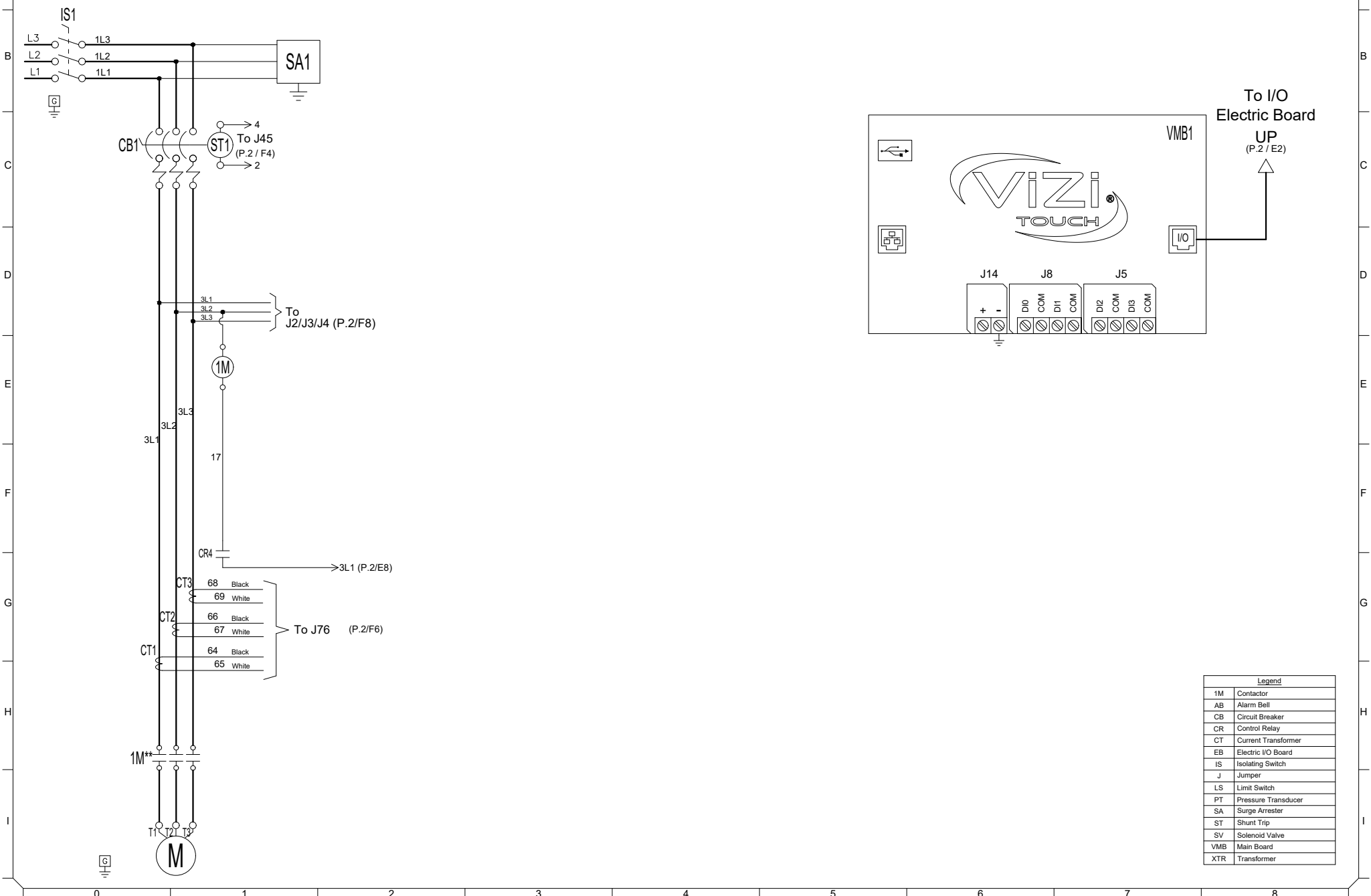## ELECTRIC ADDITIVE (FOAM) PUMP CONTROLLER
FULL VOLTAGE / ACROSS THE LINE

BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70

c UL us   FM APPROVED   NYC Dpt of Building Approved

DRAWING NUMBER
GPA-WS870/E
DWG REV. 0
SHEET 2 OF 2

I/O Electric Board

EB1

LS1**

Sensing Line Connection ***

PT1

Red White Black

(P.1 / C8)
To VMB1 I/O

UP   DOWN

SV1 ***
Brown Blue

To ST1 (P.1 / C1)

XTR1
X1 H2
24VAC
X2 H1

3L2
3L1

To 3L1-2-3 (P.1 / D1)

To CR4 (P.1 / G2)

CR4
CR4-1 CR4-2

To CT1-2-3 (P.1 / G2)

J14	J15	J16	J17	J54	J46	J43	J45	J44	J47	J36 CR4	J38 CR5	J76	J53	J4	J3	J2
+ AI4 -	+ AI3 -	+ AI2 -	+ AI1 -	LS1	AB	SV	ST 4 2	24V IN 24V OUT	24VAC 1 3	NC C NO	NC C NO	IGF I3 I2 I1		2 1 L3	2 1 L2	2 1 L1

J40 TB1 — Motor Run
J42 TB2 — Power Available
J37 TB3 — Normal Power Phase Reversal
J39 TB4 — Pump Room Alarm
J41 TB5 — Motor Trouble
J55 TB6 — Low Foam Additive Level ***

J25

IN1	IN2	IN3	IN4	IN5	IN6	IN7	IN8
Remote Manual	Lockout	Remote Auto	Deluge Valve	Low Water Level		Proof Pressure ***	Low Foam Additive Level ***

J1*   J2*

* Remove jumper to use this feature
** Contact closes when emergency start is in "ON" position
*** Optional

TORNATECH

	BY	DD/MM/YY
DRAWN BY	ZS	08/09/23
FINAL APPROVAL	FC	08/09/23

ELECTRIC ADDITIVE (FOAM) PUMP CONTROLLER

MODEL:GPA/GPY
BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70

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DRAWING NUMBER
GPX-TD870/E
DWG REV. 0
SHEET 1 OF 1
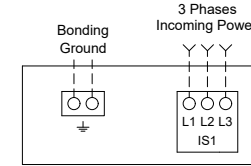
NYC Dpt of Building Approved

COPPER CONDUCTORS for Isolating Switch (IS1).
Field Wiring According to Bending Space (AWG or MCM). Terminals L1 - L2 - L3

Bending Space	5 " (127 mm)							8 " (203 mm)		
HP \ Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (2 to 1/0)	1x (1/0 to 3/0)	1x (3/0 to 250)	1x (4/0 to 250)
220 to 240	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (1 to 3/0)	1x (2/0 to 3/0)	1x (3/0 to 250)
380 to 416	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (3 to 1/0)
440 to 480	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)
600	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)

Bending Space	12 " (305 mm)				16 " (406 mm)						
HP \ Voltage	75	100	125	150	200	250	300	350	400	450	500
208	2x (1/0 to 500)	2x (2/0 to 500)	2x (4/0 to 500)	2x (250 to 500)	3x (4/0 to 500)	--------	--------	--------	--------	--------	--------
220 to 240	1x (250)	2x (2/0 to 500)	2x (3/0 to 500)	2x (4/0 to 500)	2x (350 to 500)	3x (250 to 500)	--------	--------	--------	--------	--------
380 to 416	1x (1/0 to 3/0)	1x (3/0 to 250)	1x (250)	2x (1/0 to 500)	2x (3/0 to 500)	2x (4/0 to 500)	2x (300 to 500)	2x (400 to 500)	3x (250 to 500)	3x (300 to 500)	--------
440 to 480	1x (1 to 3/0)	1x (2/0 to 3/0)	1x (3/0 to 250)	1x (4/0 to 250)	2x (1/0 to 500)	2x (3/0 to 500)	2x (4/0 to 500)	2x (300 to 500)	2x (350 to 500)	2x (400 to 500)	3x (250 to 500)
600	1x (3 to 1/0)	1x (1 to 3/0)	1x (2/0 to 3/0)	1x (3/0 to 250)	1x (250)	2x (2/0 to 500)	2x (3/0 to 500)	2x (4/0 to 500)	2x (250 to 500)	2x (300 to 500)	2x (350 to 500)
Bending Space	5 " (127 mm)	8 " (203 mm)			12 " (305 mm)						

ALUMINUM CONDUCTORS for Isolating Switch (IS1).
Field Wiring According to Bending Space (AWG or MCM). Terminals L1 - L2 - L3

Bending Space	5 " (127 mm)							8 " (203 mm)		10 " (254 mm)
HP \ Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (10 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (1 to 1/0)	1x (1/0)	1x (3/0)	1x (4/0 to 250)	1x (300) ** or 1x (250) 90°C *
220 to 240	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (2 to 1/0)	1x (1 to 1/0)	1x (2/0 to 3/0)	1x (3/0) 90°C *	1x (250)
380 to 416	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (4 to 1/0)	1x (2 to 1/0)	1x (1 to 1/0)	1x (1/0)
440 to 480	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (2 to 1/0)	1x (1 to 1/0)
600	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (4 to 1/0)	1x (2 to 1/0)

Bending Space	12 " (305 mm)				16 " (406 mm)						
HP \ Voltage	75	100	125	150	200	250	300	350	400	450	500
208	2x (2/0 to 500)	2x (4/0 to 500)	2x (300 to 500)	2x (350 to 500)	3x (300 to 500)	--------	--------	--------	--------	--------	--------
220 to 240	1x (350) ** N/A	2x (3/0 to 500)	2x (250 to 500)	2x (300 to 500)	2x (500)	3x (400 to 500)	--------	--------	--------	--------	--------
380 to 416	1x (3/0)	1x (250 to 350)	1x (350) ** N/A	2x (3/0 to 500)	2x (4/0 to 500)	2x (300 to 500)	2x (500)	3x (300 to 500)** 2x (500) 90°C *	3x (350 to 500)	3x (400 to 500)	--------
440 to 480	1x (1/0 to 3/0)	1x (3/0)	1x (250)	1x (300 to 350)** 1x (250) 90°C *	2x (3/0 to 500)	2x (250 to 500)	2x (300 to 500)	2x (400 to 500)	2x (500)	2x (500) 90°C *	3x (350 to 500)
600	1x (1 to 1/0)	1x (2/0 to 3/0)	1x (3/0) 90°C *	1x (4/0 to 250)	1x (350 to 500)	2x (3/0 to 500)	2x (4/0 to 250)	2x (300 to 500)	2x (350 to 500)	2x (400 to 500)	2x (500)
Bending Space	5 " (127 mm)	8 " (203 mm)			12 " (305 mm)						

*For standard enclosure, use 90°C aluminium wire. Consult Factory for Use of Conductors Rated Lower than 90°C.
**Consult Factory

Power Terminals

Bonding Ground

3 Phases Incoming Power

L1 L2 L3
IS1

Notes:
1 - For proper wire sizing, refer to NFPA70 and NEC (USA) or CEC (Canada) or local code.
2 - Controller suitable for service entrance in USA.
3 - For more accurate motor connections refer to motor manufacturer or motor nameplate.
4 - Controller is phase sensitive. Incoming lines must be connected in ABC sequence.

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.

ELECTRIC ADDITIVE (FOAM) PUMP CONTROLLER

MODEL:GPA
BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70

NYC Dpt of Building Approved

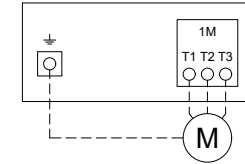DRAWING NUMBER
GPX-TD871/E
DWG REV. 0
SHEET 1 OF 1

COPPER CONDUCTORS for Motor Connection (1M).
Field Wiring According to Bending Space (AWG or MCM). Terminals T1 - T2 - T3

HP / Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (10 to 2)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (4 to 2)	1x (3 to 2/0)	1x (2 to 2/0)	1x (1/0 to 3/0)	1x (3/0)	1x (4/0 to 300)
220 to 240	1x (10 to 2)	1x (10 to 2)	1x (8 to 2)	1x (6 to 2)	1x (4 to 2)	1x (4 to 2/0)	1x (3 to 2/0)	1x (1/0 to 3/0)	1x (2/0 to 3/0)	1x (3/0)
380 to 416	1x (10 to 2)	1x (10 to 2)	1x (10 to 2)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 1/0)	1x (4 to 2)	1x (3 to 2/0)	1x (1 to 2/0)
440 to 480	1x (10 to 2)	1x (10 to 2)	1x (10 to 2)	1x (10 to 2)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 2)	1x (4 to 2/0)	1x (3 to 2/0)
600	1x (10 to 2)	1x (10 to 2)	1x (10 to 2)	1x (10 to 2)	1x (10 to 2)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 2)	1x (4 to 2/0)

HP / Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (300)	2x (2/0 to 300)	2x (4/0 to 300)	2x (250 to 300)	2x (400 to 600)	--------	--------	--------	--------	--------	--------
220 to 240	1x (250 to 300)	2x (2/0 to 300)	2x (3/0 to 300)	2x (4/0 to 300)	2x (350 to 500)	2x (500 to 600)	--------	--------	--------	--------	--------
380 to 416	1x (1/0 to 3/0)	1x (3/0)	1x (250 to 300)	1x (300)	2x (3/0 to 300)	2x (4/0 to 300)	2x (300)	2x (400 to 500)	2x (500 to 600)	2x (600)	
440 to 480	1x (1 to 1/0)	1x (2/0 to 3/0)	1x (3/0)	1x (4/0 to 300)	2x (1/0 to 300)	2x (3/0 to 300)	2x (4/0 to 300)	2x (300)	2x (350 to 500)	2x (400 to 600)	2x (500 to 600)
600	1x (3 to 1/0)	1x (1 to 1/0)	1x (2/0 to 3/0)	1x (3/0)	1x (250 to 300)	2x (2/0 to 300)	2x (3/0 to 300)	2x (4/0 to 300)	2x (250 to 300)	2x (300)	2x (350 to 500)

ALUMINUM CONDUCTORS for Contactor (1M).
Field Wiring According to Bending Space (AWG or MCM). Terminals T1 - T2 - T3

HP / Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (10 to 2/0) **	1x (10 to 2/0) **	1x (6 to 2/0) **	1x (4 to 2/0) **	1x (2 to 2/0) **	1x (1 to 2/0) **	1x (1/0 to 2/0) **	1x (2/0) 90°C *	Consult Factory	1x (300)
220 to 240	1x (10 to 2/0) **	1x (10 to 2/0) **	1x (8 to 2/0) **	1x (4 to 2/0) **	1x (3 to 2/0) **	1x (2 to 2/0) **	1x (1 to 2/0) **	1x (2/0)	1x (3/0) 90°C *	Consult Factory
380 to 416	1x (12 to 2/0) **	1x (12 to 2/0) **	1x (10 to 2/0) **	1x (8 to 2/0) **	1x (6 to 2/0) **	1x (6 to 2/0) **	1x (4 to 2/0) **	1x (2 to 2/0) **	1x (1 to1/0)	1x (1/0)
440 to 480	1x (12 to 2/0) **	1x (12 to 2/0) **	1x (10 to 2/0) **	1x (10 to 2/0) **	1x (8 to 2/0) **	1x (6 to 2/0) **	1x (6 to 2/0) **	1x (4 to 2/0) **	1x (2 to 1/0)	1x (1 to 1/0)
600	1x (12 to 2/0) **	1x (12 to 2/0) **	1x (12 to 2/0) **	1x (10 to 2/0) **	1x (10 to 2/0) **	1x (8 to 2/0) **	1x (8 to 2/0) **	1x (4 to 2/0) **	1x (4 to 2/0) **	1x (2 to 1/0)

HP / Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (300) 90°C *	2x (4/0 to 300)	2x (300)	2x (300) 90°C *	2x (600)	--------	--------	--------	--------	--------	--------
220 to 240	1x (300) 90°C *	2x (3/0 to 300)	2x (250 to 300)	2x (300)	2x (500)	2x (600)	--------	--------	--------	--------	--------
380 to 416	1x (3/0)	Consult Factory	1x (300) 90°C *	Consult Factory	2x (4/0 to 300)	2x (300)	Consult Factory	2x (600)	2x (600) 90°C *	2x (600) 90°C *	--------
440 to 480	1x (1/0)	1x (3/0)	Consult Factory	1x (300)	2x (3/0 to 300)	2x (250 to 300)	2x (300)	2x (300) 90°C *	2x (500)	2x (600)	2x (600) 90°C *
600	1x (1 to 1/0)	Consult Factory	1x (3/0) 90°C *	Consult Factory	1x (300) 90°C *	2x (3/0 to 300)	2x (4/0 to 300)	2x (300)	2x (300) 90°C *	2x (300) 90°C *	Consult Factory

* For standard enclosure, use 90°C aluminium wire. Consult Factory for Use of Conductors Rated Lower than 90°C.

** Option V659 required.

Motor Terminals

Model: GPA

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TORNATECH

	BY	DD/MM/YY
DRAWN BY	ZS	08/09/23
FINAL APPROVAL	FC	08/09/23

ELECTRIC ADDITIVE (FOAM) PUMP CONTROLLER

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Subject to change without notice.

MODEL:GPA/GPY
BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70

NYC Dpt of Building Approved
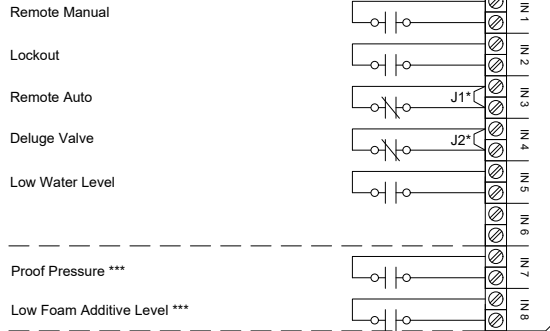
DRAWING NUMBER
GPX-TD873/E
DWG REV. 0
SHEET 1 OF 1

Field Connections

Terminals Wire Size:
24 - 12 AWG
0.5 Nm

I/O Electric Board

- Remote Manual — IN 1
- Lockout — IN 2
- Remote Auto — J1* — IN 3
- Deluge Valve — J2* — IN 4
- Low Water Level — IN 5
- IN 6
- Proof Pressure *** — IN 7
- Low Foam Additive Level *** — IN 8

J25

Controller Terminal Strip

Network Connections

Terminals Wire Size:
Shielded Female Connector RJ45

Modbus TCP/IP RJ45
Located on Main Board

Alarm Contacts

Terminals Wire Size:
24 - 12 AWG
0.5 Nm

I/O Electric Board

Motor Run
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
TB1

Power Available
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
TB2

Normal Power Phase Reversal
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
TB3

Pump Room Alarm**
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
TB4

Motor Trouble**
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
TB5

Low Foam Additive Level ***
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
- Normally Opened Closes to alarm { NO / C / NC }
- Normally Closed Opens to alarm
TB6

* Remove jumper to use this feature
** Re-assignable
*** Optional