



# TORNATECH

**Project:** \_\_\_\_\_

**Customer:** \_\_\_\_\_

**Engineer:** \_\_\_\_\_

**Pump Manufacturer:** \_\_\_\_\_

**Technical Data  
Submittal Document**

# **GPx Series**

**Full Service  
Electric Fire 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.**

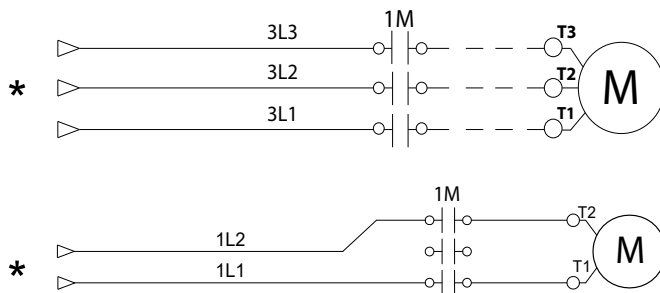


November 2025

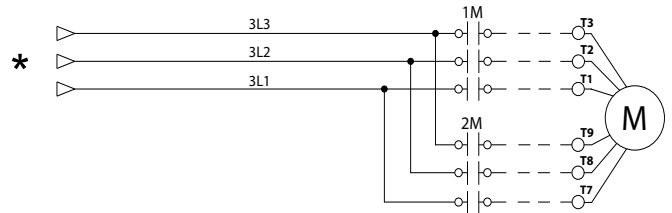


#### Select starting method

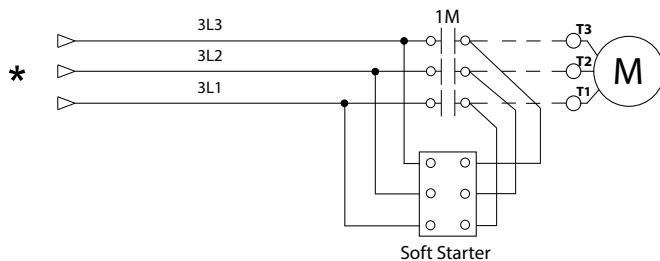
##### Model GPA Across the line



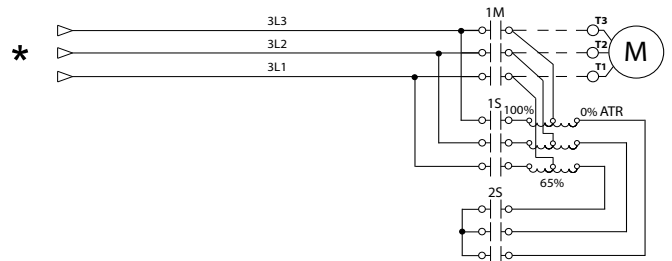
##### Model GPP Partwinding



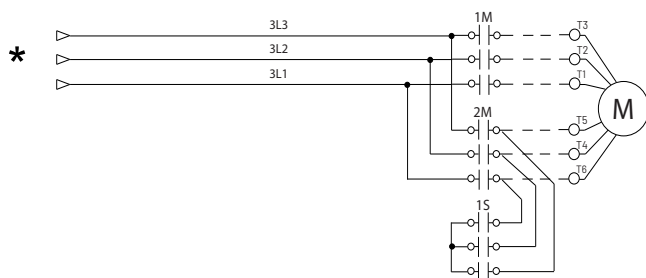
##### Model GPS Soft Start Soft Stop



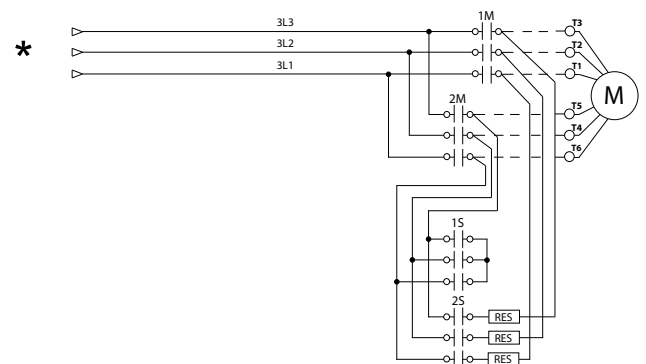
##### Model GPR Autotransformer



##### Model GPY Wye-Delta Open



##### Model GPW Wye-Delta Closed



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

\*Please see Disconnecting Means details on page 4

### Select voltage and power rating

| Voltage                       | Select Voltage | HP  | Select HP |
|-------------------------------|----------------|-----|-----------|
| 120V/1ph/60Hz <sup>1</sup>    |                | 5   |           |
| 200V/1ph/60Hz <sup>1</sup>    |                | 7.5 |           |
| 208V/1ph/60Hz <sup>1</sup>    |                | 10  |           |
| 220V/1ph/60Hz <sup>1</sup>    |                | 15  |           |
| 230V/1ph/60Hz <sup>1</sup>    |                | 20  |           |
| 240V/1ph/60Hz <sup>1</sup>    |                | 25  |           |
| 200V/3ph/50-60Hz <sup>3</sup> |                | 30  |           |
| 208V/3ph/50-60Hz <sup>3</sup> |                | 40  |           |
| 220V/3ph/50-60Hz <sup>4</sup> |                | 50  |           |
| 230V/3ph/50-60Hz <sup>4</sup> |                | 60  |           |
| 240V/3ph/50-60Hz <sup>4</sup> |                | 75  |           |
| 380V/3ph/50-60Hz <sup>5</sup> |                | 100 |           |
| 400V/3ph/50-60Hz <sup>5</sup> |                | 125 |           |
| 415V/3ph/50-60Hz <sup>5</sup> |                | 150 |           |
| 440V/3ph/50-60Hz <sup>6</sup> |                | 200 |           |
| 460V/3ph/50-60Hz <sup>6</sup> |                | 250 |           |
| 480V/3ph/50-60Hz <sup>6</sup> |                | 300 |           |
| 575V/3ph/60Hz <sup>6</sup>    |                | 350 |           |
| 600V/3ph/60Hz <sup>6</sup>    |                | 400 |           |
|                               |                | 450 |           |
|                               |                | 500 |           |

| Voltage          | Select Voltage | kW <sup>2</sup> | Select kW |
|------------------|----------------|-----------------|-----------|
| 380V/3ph/50-60Hz |                | 4               |           |
| 400V/3ph/50-60Hz |                | 5.5             |           |
| 415V/3ph/50-60Hz |                | 7.5             |           |
|                  |                | 11              |           |
|                  |                | 15              |           |
|                  |                | 18.5            |           |
|                  |                | 22              |           |
|                  |                | 30              |           |
|                  |                | 37              |           |
|                  |                | 45              |           |
|                  |                | 55              |           |
|                  |                | 75              |           |
|                  |                | 90              |           |
|                  |                | 110             |           |
|                  |                | 132             |           |
|                  |                | 160             |           |
|                  |                | 200             |           |
|                  |                | 250             |           |
|                  |                | 315             |           |
|                  |                | 355             |           |
|                  |                | 400             |           |
|                  |                | 450             |           |

Notes: <sup>1</sup> Only available for Model GPA. Maximum power rating is 30HP.

<sup>2</sup> kW power ratings only available for Models GPA, GPS and GPY.

<sup>3</sup> Maximum power rating is 200HP.

<sup>4</sup> Maximum power rating is 250HP.

<sup>5</sup> Maximum power rating is 450HP.

<sup>6</sup> Maximum power rating is 500HP.



|                                                         |                                                                                                                                                         |                                                                         |                      |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------|
| <b>Standard, Listings, Approvals and Certifications</b> | <b>Built to NFPA 20</b>                                                                                                                                 |                                                                         |                      |
|                                                         | <b>Underwriters Laboratory (UL)</b>                                                                                                                     | UL218 - Fire Pump Controllers                                           |                      |
|                                                         | <b>FM Global</b>                                                                                                                                        | Class 1321/1323                                                         |                      |
|                                                         | <b>New York City</b>                                                                                                                                    | Accepted for use in the City of New York by the Department of Buildings |                      |
|                                                         | <b>CE Mark</b>                                                                                                                                          | Various EN, IEC & CEE directives and standards                          |                      |
|                                                         | Built in Canada or U.A.E                                                                                                                                |                                                                         | Built in Europe      |
|                                                         | CE Mark Option                                                                                                                                          |                                                                         | Supplied as Standard |
| <b>Enclosure</b>                                        | <b>Protection Rating</b>                                                                                                                                |                                                                         |                      |
|                                                         | Built in Canada or U.A.E                                                                                                                                |                                                                         | Built in Europe      |
|                                                         | Standard: NEMA 2                                                                                                                                        |                                                                         | Standard: IP55       |
|                                                         | <b>Optional</b>                                                                                                                                         |                                                                         |                      |
|                                                         | 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                 |
|                                                         | <b>Accessories</b> <ul style="list-style-type: none"> <li>• Bottom entry gland plate</li> <li>• Lifting Lugs</li> <li>• Keylock handle</li> </ul>       |                                                                         |                      |
|                                                         | <b>Paint Specifications</b> <ul style="list-style-type: none"> <li>• Red RAL3002</li> <li>• Powder coating</li> <li>• Glossy textured finish</li> </ul> |                                                                         |                      |

| Short Circuit Withstand Ratings |                          |               |             |                          |               |             |                          |               |             |                          |               |             |                       |               |             |
|---------------------------------|--------------------------|---------------|-------------|--------------------------|---------------|-------------|--------------------------|---------------|-------------|--------------------------|---------------|-------------|-----------------------|---------------|-------------|
| HP                              | 200V to 208V 50/60Hz/3ph |               |             | 220V to 240V 50/60Hz/3ph |               |             | 380V to 415V 50/60Hz/3ph |               |             | 440V to 480V 50/60Hz/3ph |               |             | 575V to 600V 60Hz/3ph |               |             |
|                                 | Standard                 | Inter-mediate | High        | Standard                 | Inter-mediate | High        | Standard                 | Inter-mediate | High        | Standard                 | Inter-mediate | High        | Standard              | Inter-mediate | High        |
|                                 |                          | Option D13    | Option D13B |                          | Option D13    | Option D13B |                          | Option D13    | Option D13B |                          | Option D13    | Option D13B |                       | Option D13    | Option D13B |
| ≤150                            | 100kA                    | 150kA         | 200kA       | 100kA                    | 150kA         | 200kA       | 100kA                    | 150kA         | 200kA       | 100kA                    | 150kA         | 200kA       | 50kA                  | 100kA         | -           |
| 200                             | 50kA                     | 100kA         | -           |                          |               |             |                          |               |             |                          |               |             |                       |               |             |
| 250                             | -                        | -             | -           |                          |               |             |                          |               |             |                          |               |             |                       |               |             |
| 300                             | -                        | -             | -           | -                        | -             | -           |                          | 50kA          | 100kA       |                          | -             |             |                       |               |             |
| 350                             | -                        | -             | -           | -                        | -             | -           |                          |               |             |                          | -             |             |                       |               |             |
| 400                             | -                        | -             | -           | -                        | -             | -           | -                        |               |             |                          |               |             |                       |               |             |
| 450                             | -                        | -             | -           | -                        | -             | -           | 30kA                     | -             | -           | 50kA                     | 100kA         | -           |                       |               |             |
| 500                             | -                        | -             | -           | -                        | -             | -           |                          | -             | -           | 50kA                     | 100kA         | -           |                       |               |             |



|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ambient Temperature Rating</b>  | <b>Standard:</b><br>4°C to 40°C / 39°F to 104°F<br><b>Optional:</b><br>4°C to 55°C / 39°F to 131°F<br>Controllers built in Dubai, UAE (Tornatech FZE) are supplied standard with 55°C rating.                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Surge Suppression</b>           | Surge arrestor rated to suppress surges above line voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Disconnecting Means</b>         | <ul style="list-style-type: none"> <li>• Isolating switch and circuit breaker assembly:               <ul style="list-style-type: none"> <li>- Door interlocked in the ON position</li> <li>- Isolating switch rated not less than 115% of motor full load current</li> <li>- Circuit breaker continuous rating not less than 115% of motor full load current</li> <li>- Overcurrent sensing non-thermal type, magnetic only</li> <li>- Instantaneous trip setting of not more than 20 times the motor full load current</li> </ul> </li> <li>• Common flange mounted operating handle</li> </ul> |
| <b>Service Entrance Rating</b>     | Suitable as service entrance equipment (not applicable for installations in Canada).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Emergency Start Handle</b>      | <ul style="list-style-type: none"> <li>• Flange mounted</li> <li>• Pull and latch activation</li> <li>• Integrated limit switch</li> <li>• Across the line start (direct on line)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Locked Rotor Protector</b>      | <ul style="list-style-type: none"> <li>• Operate shunt trip to open circuit breaker</li> <li>• Factory set at 600% of motor full load current</li> <li>• Trip between 8 and 20 seconds</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Electrical Readings</b>         | <ul style="list-style-type: none"> <li>• Voltage phase to phase (normal power)</li> <li>• Amperage of each phase when motor is running</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Pressure Readings</b>           | <ul style="list-style-type: none"> <li>• Continuous system pressure display</li> <li>• Cut-in and Cut-out pressure settings</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Pressure and Event recorder</b> | <ul style="list-style-type: none"> <li>• Pressure readings with date stamp</li> <li>• Event recording with date stamp</li> <li>• Under regular maintained operation, events are stored in memory for the life of the controller.</li> <li>• Data viewable on operator interface display screen</li> <li>• Downloadable by USB port to external memory device or wireless connection to manufacturers App (mobile device).</li> </ul>                                                                                                                                                              |
| <b>Pressure Sensing</b>            | <ul style="list-style-type: none"> <li>• Pressure transducer and run test solenoid valve assembly for fresh water application</li> <li>• Pressure sensing line connection 1/2" Female NPT</li> <li>• Drain connection 3/8"</li> <li>• Rated for 0-500PSI working pressure (standard display at 0-300PSI)</li> <li>• Externally mounted with protective cover</li> </ul>                                                                                                                                                                                                                           |



|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                    |                                                                                                                                                   |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Audible Alarm</b>               | Alarm buzzer - 85dB at 3 meters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                    |                                                                                                                                                   |
| <b>Visual Indications</b>          | <ul style="list-style-type: none"> <li>• Power available</li> <li>• Motor run</li> <li>• Periodic test</li> <li>• Manual start</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Deluge valve start</li> <li>• Remote automatic start</li> <li>• Remote manual start</li> <li>• Emergency start</li> </ul> | <ul style="list-style-type: none"> <li>• Pump on demand/Automatic start</li> <li>• Pump room temperature (°F or °C)</li> <li>• Lockout</li> </ul> |
| <b>Visual &amp; Audible Alarms</b> | <p>Visual</p> <ul style="list-style-type: none"> <li>• Control voltage not healthy</li> <li>• Invalid cut-in</li> <li>• Lock rotor current</li> <li>• Loss of power</li> <li>• Low ambient temperature</li> <li>• Low water level</li> <li>• Motor trouble</li> <li>• Phase reversal (normal power)</li> </ul> <p>Visual and audible</p> <ul style="list-style-type: none"> <li>• Fail to start</li> </ul> <p>Overcurrent</p> <ul style="list-style-type: none"> <li>• Overvoltage</li> <li>• Phase loss L1</li> <li>• Phase loss L2</li> <li>• Phase loss L3</li> <li>• Phase unbalanced</li> <li>• Pressure transducer fault detected</li> </ul> <p>Pump on demand</p> <ul style="list-style-type: none"> <li>• Pump room alarm</li> <li>• Service required</li> <li>• Undercurrent</li> <li>• Undervoltage</li> <li>• Check weekly test solenoid</li> <li>• Weekly test cut-in reached</li> </ul> |                                                                                                                                                                    |                                                                                                                                                   |
| <b>Remote Alarm Contacts</b>       | <p>DPDT-8A-250V.AC</p> <ul style="list-style-type: none"> <li>• Power available</li> <li>• Phase reversal</li> <li>• Motor run</li> <li>• Common pump room alarm (field re-assignable)** <ul style="list-style-type: none"> <li>• Overvoltage</li> <li>• Undervoltage</li> <li>• Phase unbalance</li> <li>• Low pump room temperature</li> <li>• High Pump room temperature</li> </ul> </li> <li>• Common motor trouble (field re-assignable)** <ul style="list-style-type: none"> <li>• Overcurrent</li> <li>• Fail to start</li> <li>• Undercurrent</li> <li>• Ground fault</li> </ul> </li> <li>• Free (field programmable)**</li> </ul>                                                                                                                                                                                                                                                          |                                                                                                                                                                    |                                                                                                                                                   |

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



|                                                  |                                                                                                                                                                                                                 |                                                                                                                                                               |                                                                                                                                                                  |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ViZiTouch V2.1<br/>Operator Interface</b>     | <ul style="list-style-type: none"> <li>• Embedded microcomputer with software PLC logic</li> <li>• 7.0" color touch screen (HMI technology)</li> <li>• Upgradable software</li> <li>• Multi-language</li> </ul> |                                                                                                                                                               |                                                                                                                                                                  |
| <b>Communication<br/>Protocol<br/>Capability</b> | <ul style="list-style-type: none"> <li>• Protocol: Modbus</li> <li>• Connection type: Shielded female connector RJ45</li> <li>• Frame Format: TCP/IP</li> <li>• Addresses: See bulletin MOD-GPx</li> </ul>      |                                                                                                                                                               |                                                                                                                                                                  |
| <b>Operation</b>                                 | <b>Automatic Start</b>                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Start on pressure drop</li> <li>• Remote start signal from automatic device</li> <li>• Deluge valve start</li> </ul> |                                                                                                                                                                  |
|                                                  | <b>Manual Start</b>                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• Start pushbutton</li> <li>• Run test pushbutton</li> <li>• Remote start from manual device</li> </ul>                |                                                                                                                                                                  |
|                                                  | <b>Stopping</b>                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Manual with Stop pushbutton</li> <li>• Automatic after expiration of minimum run timer ***</li> </ul>                |                                                                                                                                                                  |
|                                                  | <b>Timers</b>                                                                                                                                                                                                   | Field Adjustable & Visual Countdown                                                                                                                           | <ul style="list-style-type: none"> <li>• Minimum run timer ***(off delay)</li> <li>• Sequential start timer (on delay)</li> <li>• Periodic test timer</li> </ul> |
|                                                  | <b>Actuation</b>                                                                                                                                                                                                | Visual Indication                                                                                                                                             | <ul style="list-style-type: none"> <li>• Pressure</li> <li>• Non-pressure</li> </ul>                                                                             |
|                                                  | <b>Mode</b>                                                                                                                                                                                                     |                                                                                                                                                               | <ul style="list-style-type: none"> <li>• Automatic</li> <li>• Non-automatic</li> </ul>                                                                           |

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



|      |                                                                                                                                                                                                                                    |      |                                                                                                                            |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------|
| A4   | Flow switch provision                                                                                                                                                                                                              | C17  | Flow meter valve loop open c/w visual indication and alarm contact (DPDT)                                                  |
| A8   | Foam pump application w/o pressure transducer and run test solenoid valve.                                                                                                                                                         | C18  | High water reservoir level c/w visual indication and alarm contact (DPDT)                                                  |
| A9   | Low zone pump control function                                                                                                                                                                                                     | C19  | Emergency start alarm contact (DPDT)                                                                                       |
| A10  | Middle zone pump control function                                                                                                                                                                                                  | C20  | Manual start alarm contact (DPDT)                                                                                          |
| A11  | High zone pump control function                                                                                                                                                                                                    | C21  | Deluge valve start alarm contact (DPDT)                                                                                    |
| A13  | Non-pressure actuated controller w/o pressure transducer and run test solenoid valve                                                                                                                                               | C22  | Remote automatic start alarm contact (DPDT)                                                                                |
| A16  | Lockout/interlock circuit from equipment installed inside the pump room                                                                                                                                                            | C23  | Remote manual start alarm contact (DPDT)                                                                                   |
| B11  | Built in alarm panel (120V.AC supervisory power) providing indication for:<br>• Audible alarm & silence pushbutton for motor run, phase reversal, loss of phase.<br>• Pilot lights for loss of phase & supervisory power available | C24  | High pump room temperature alarm contact (DPDT)                                                                            |
| B11B | Built in alarm panel same as B11 but 220-240VAC supervisory power                                                                                                                                                                  | C25  | Second set of standard alarm contacts (DPDT) (Typical for city of Los Angeles and Denver)                                  |
| B19A | High motor temperature c/w thermostat relay and alarm contacts (DPDT)                                                                                                                                                              | Cx   | Additional visual and alarm contact (Specify function) (DPDT)                                                              |
| B19B | High motor temperature c/w PT100 relay and alarm contacts (DPDT)                                                                                                                                                                   | D1   | Low suction pressure transducer for fresh water rated at 0-500PSI with visual indication and alarm contact                 |
| B21  | Ground fault alarm detection c/w visual indication and alarm contact (DPDT)                                                                                                                                                        | D1A  | Low suction pressure transducer for sea water rated at 0-500PSI with visual indication and alarm contact                   |
| B25  | Digital flow test feature complete with access to Pump Curve menu, display of flow rate on main screen and 25ft cable (Option ONLY suitable for connection with Tornatech digital flow meter)                                      | D5   | Pressure transducer and run test solenoid valve for fresh water rated for 0-500PSI (for factory calibration purposes only) |
| C1   | Extra motor run alarm contact (DPDT)                                                                                                                                                                                               | D5D  | Pressure transducer and run test solenoid valve for sea water rated for 0-500PSI                                           |
| C4   | Periodic test alarm contact (DPDT)                                                                                                                                                                                                 | D10  | Omit mounting feet (when applicable)                                                                                       |
| C6   | Low discharge pressure alarm contact (DPDT)                                                                                                                                                                                        | D14  | Anti-condensation heater & thermostat                                                                                      |
| C7   | Low pump room temperature alarm contact (DPDT)                                                                                                                                                                                     | D14A | Anti-condensation heater & humidistat                                                                                      |
| C10  | Low water reservoir level alarm contact (DPDT)                                                                                                                                                                                     | D14B | Anti-condensation heater & thermostat & humidistat                                                                         |
| C11  | High electric motor temperature alarm contact (DPDT)                                                                                                                                                                               | D15  | Tropicalization                                                                                                            |
| C12  | High electric motor vibration c/w visual indication and alarm contact (DPDT)                                                                                                                                                       | D18  | CE Mark with factory certificate                                                                                           |
| C14  | Pump on demand / automatic start alarm contact (DPDT)                                                                                                                                                                              | D27  | Motor heater connection (external single phase power source and heater on/off contact)                                     |
| C15  | Pump fail to start alarm contact (DPDT)                                                                                                                                                                                            | D27A | Motor heater connection (internal single phase power source and heater on/off contact)                                     |
| C16  | Control voltage healthy alarm contact (DPDT)                                                                                                                                                                                       | D28  | Customized drawing set                                                                                                     |

\*For fire pump controller section only.

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





|      |                                                                                       |
|------|---------------------------------------------------------------------------------------|
| D34A | Field programmable I/O board -<br>5 Input / 5 output                                  |
| D36  | Redundant pressure transducer for fresh<br>water rated for 0-500PSI                   |
| D36A | Redundant pressure transducer for sea<br>water rated for 0-500PSI                     |
| D43  | Seismic Certification compliant to CBC 2019,<br>IBC 2018 rigid base/wall mounted only |
| D44  | Special Seismic Certification compliant to<br>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 | Slovakian                              |
| L10 | Croatian                               |
| L11 | Czech                                  |
| L12 | Portuguese                             |
| L13 | Dutch                                  |
| L15 | Turkish                                |
| L16 | Swedish                                |
| L21 | Danish                                 |
| L25 | Chinese                                |
| L28 | Finnish                                |
| L29 | Norwegian                              |

Additional Options:

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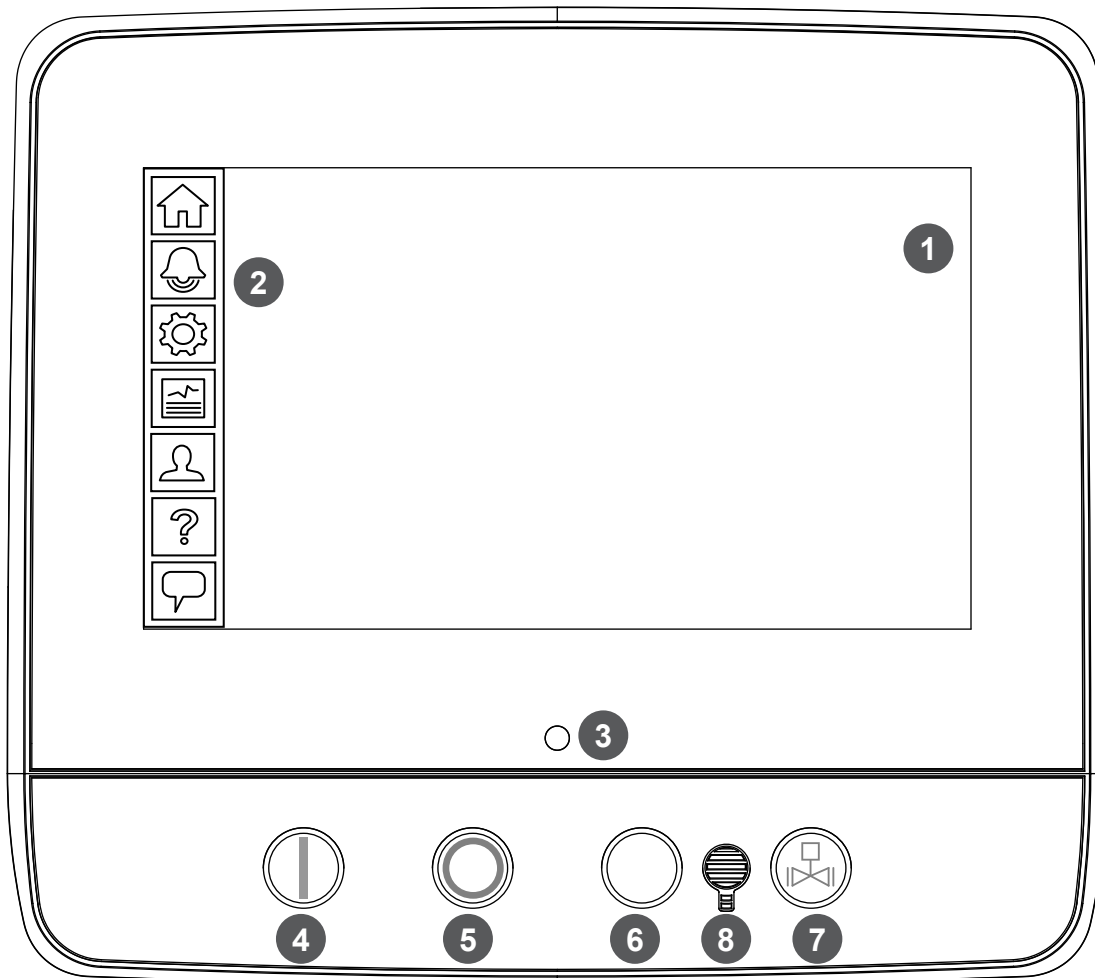
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Note: Options chosen from this page are not electrically represented on the wiring schematics in this submittal package.



#### 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

**TORNATECH**© Tornatech, Inc. Not for construction.  
Subject to change without notice.

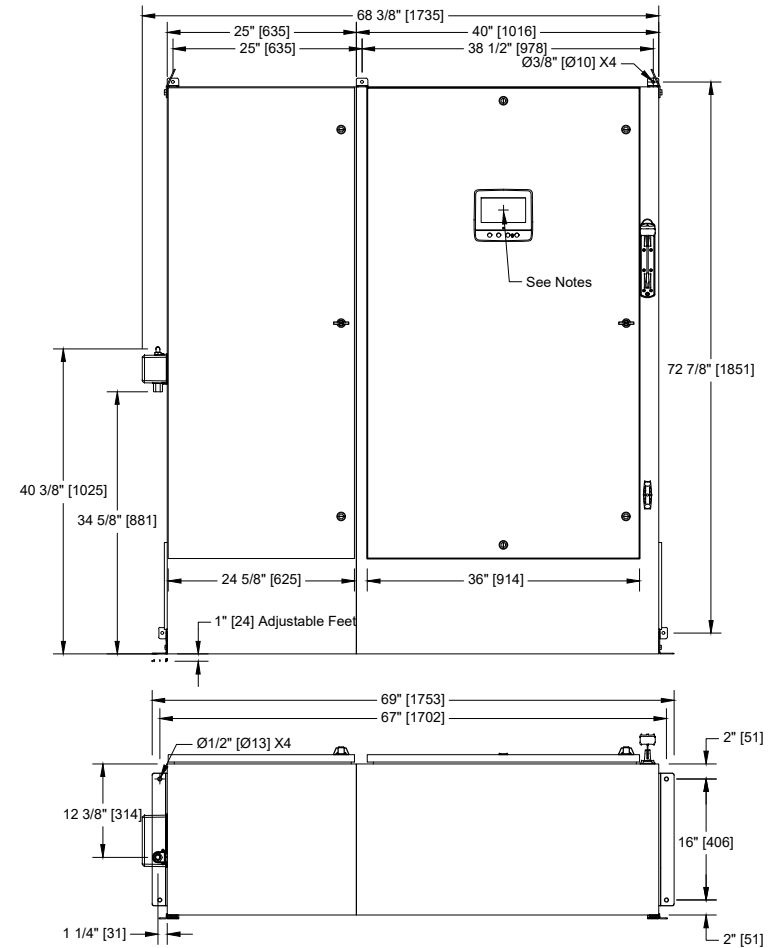
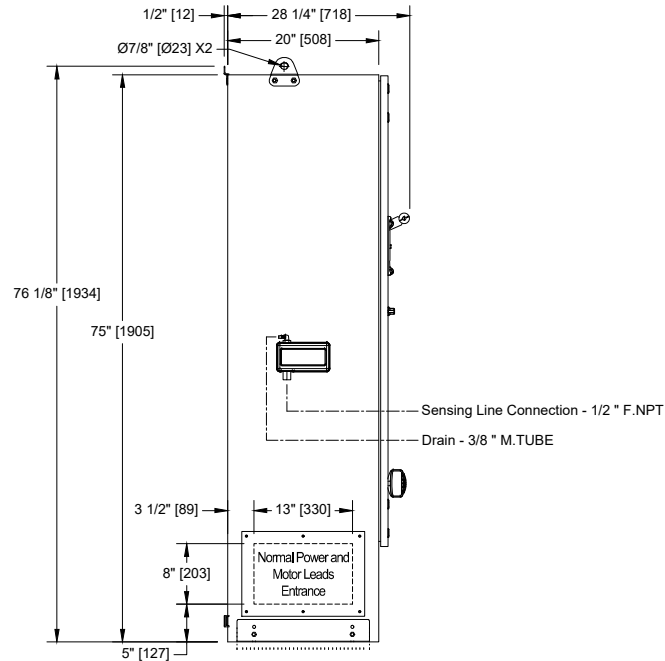
BY DD/MM/YY

DRAWN BY MLC 04/10/24

FINAL APPROVAL FC 07/11/24

**ELECTRIC FIRE PUMP CONTROLLER****MODEL:GPR/GPS/GPW**

BUILT TO THE LATEST EDITION OF THE NFPA20 &amp; NFPA70

THIRD ANGLE  
PROJECTIONDRAWING NUMBER  
**GPX-D1942/E**  
DWG REV. 0  
SHEET 1 OF 1**Voltage / Power Table**

| Voltage         | Min HP         | Max HP |
|-----------------|----------------|--------|
| 208             | 200            |        |
| 220 - 240       | 250            |        |
| 380 - 400 - 415 | 350            | 450    |
| 440 - 480       | 400            | 500    |
| 600             | Not Applicable |        |

**Notes:**

- Standard NEMA: NEMA 2
- Standard paint : textured red RAL 3002.
- All dimensions are in inches [millimeters].
- Center of the screen: 58-3/4" [1491] from bottom (no feet).
- Side conduit entrance through removable gland plate recommended.
- Use watertight conduit and connector only.
- Protect equipment against drilling chips.
- Door swing equal to door width.



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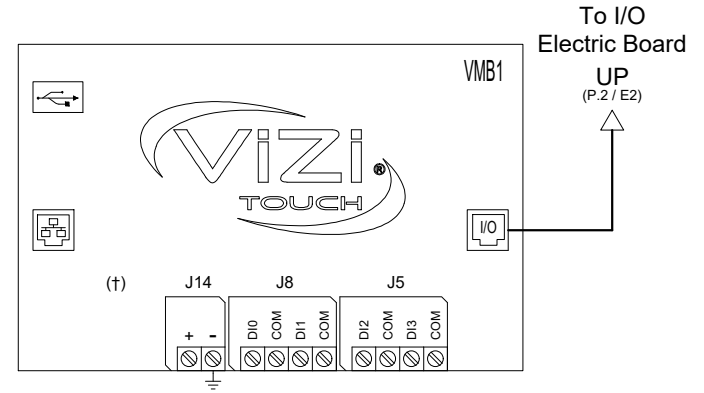
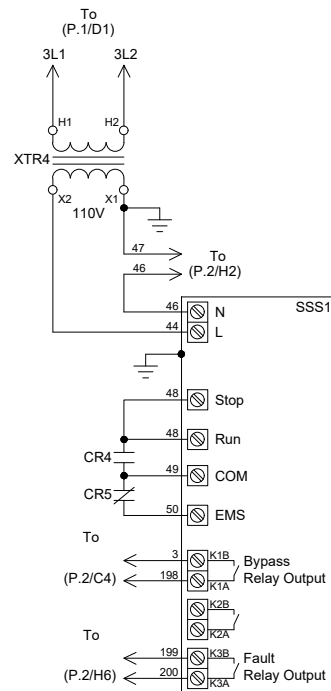
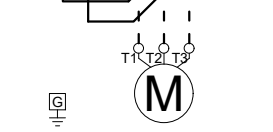
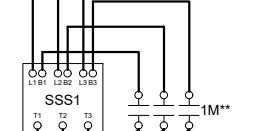
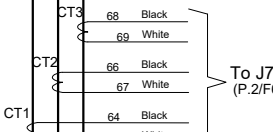
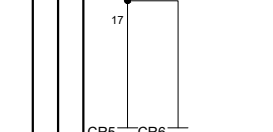
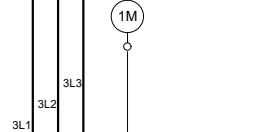
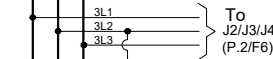
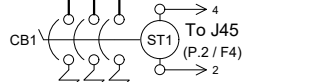
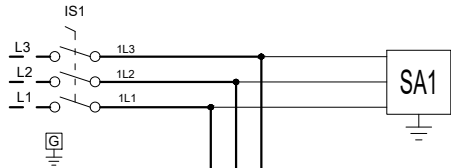
## ELECTRIC FIRE PUMP CONTROLLER REDUCED VOLTAGE / SOFT STARTER

**MODEL:GPS**

BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70



DRAWING NUMBER  
**GPS-WS900/E**  
DWG REV. 0  
SHEET 1 OF 2



| Legend |                     |
|--------|---------------------|
| 1M     | Contactors          |
| 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      |
| SSS    | Soft Starter        |
| SV     | Solenoid Valve      |
| VMB    | Main Board          |
| XTR    | Transformer         |



07/11/24

## SHEET 2 OF 2



\*\* Contact closes when emergency start is in "ON" position



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## ELECTRIC FIRE PUMP CONTROLLER

**MODEL:GPX**

BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70



DRAWING NUMBER  
**GPX-TD907/E**  
DWG REV. 0  
SHEET 1 OF 1

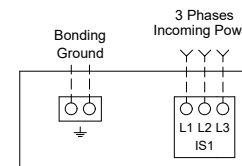
### COPPER CONDUCTORS for Isolating Switch (IS1).

Field Wiring According to Bending Space (AWG or MCM). Terminals L1 - L2 - L3

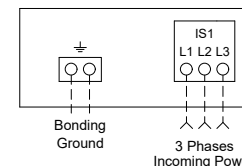
| Bending Space | 5 " (127 mm)   |                |                |                |                |               |               | 8 " (203 mm)    |                 |                 |
|---------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|-----------------|-----------------|-----------------|
| 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 (1 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 250) | 1x (3/0 to 250) | 1x (250)        | 1x (300 to 500) | 1x (500)         | 2x (4/0 to 500) | 2x (300 to 500) | 3x (4/0 to 500) | 3x (250 to 500) | 4x (3/0 to 500) | -----           |
| 440 to 480    | 1x (1 to 250)   | 1x (2/0 to 250) | 1x (3/0 to 250) | 1x (4/0 to 250) | 1x (350 to 500)  | 1x (500)        | 2x (4/0 to 500) | 2x (300 to 500) | 3x (3/0 to 500) | 3x (4/0 to 500) | 3x (250 to 500) |
| 600           | 1x (3 to 1/0)   | 1x (1 to 250)   | 1x (2/0 to 250) | 1x (3/0 to 250) | 1x (250 to 500)  | 1x (350 to 500) | 1x (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)   |                 |                 |

### Power Terminals



\*\*\*Only for 16"(406 mm) bending space



### 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<br>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) **<br>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 to 250)    | 1x (250)        | Consult Factory | 1x (500)        | Consult Factory  | 2x (300 to 500) | 2x (500)        | 3x (300 to 500) | 3x (350 to 500) | 3x (400 to 500) | -----           |
| 440 to 480    | 1x (1/0 to 250)    | 1x (3/0 to 250) | 1x (250)        | 1x (250) 90°C * | 1x (500)         | Consult Factory | 2x (300 to 500) | 2x (400 to 500) | 3x (250 to 500) | 3x (300 to 500) | 3x (350 to 500) |
| 600           | 1x (1 to 1/0)      | 1x (2/0 to 250) | 1x (4/0 to 250) | 1x (4/0 to 250) | 1x (350 to 500)  | 1x (500)        | Consult Factory | 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

\*\*\* Aluminum is not permitted in Canada.

#### Notes:

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

Drawing for information only.  
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FINAL APPROVAL FC 07/11/24

## ELECTRIC FIRE PUMP CONTROLLER

## MODEL:GPR/GPS

BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70



DRAWING NUMBER  
**GPX-TD903/E**  
DWG REV. 0  
SHEET 1 OF 1

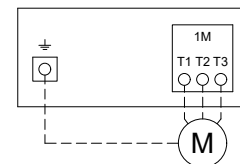
### COPPER CONDUCTORS for Motor Connection (1M).

Field Wiring According to Bending Space (AWG or MCM). Terminals T1 - T2 - T3

| HP<br>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 to 3/0)   | 1x (2/0 to 3/0) | 1x (3/0)        |
| 380 to 416    | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (8 to 2/0)  | 1x (8 to 2/0)  | 1x (6 to 2/0) | 1x (6 to 2/0) | 1x (4 to 2/0)   | 1x (3 to 2/0)   | 1x (1 to 2/0)   |
| 440 to 480    | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (8 to 2/0)  | 1x (8 to 2/0) | 1x (6 to 2/0) | 1x (6 to 2/0)   | 1x (4 to 2/0)   | 1x (3 to 2/0)   |
| 600           | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (10 to 2/0) | 1x (8 to 2/0) | 1x (8 to 2/0) | 1x (6 to 2/0)   | 1x (6 to 2/0)   | 1x (4 to 2/0)   |

| HP<br>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 to 600) | 2x (400 to 600) | 2x (500 to 600) | 2x (600)        | -----           |
| 440 to 480    | 1x (1 to 2/0)   | 1x (2/0 to 3/0) | 1x (3/0 to 300) | 1x (4/0 to 300) | 2x (1/0 to 300) | 2x (3/0 to 300) | 2x (4/0 to 600) | 2x (300 to 600) | 2x (350 to 600) | 2x (400 to 600) | 2x (500 to 600) |
| 600           | 1x (3 to 2/0)   | 1x (1 to 3/0)   | 1x (2/0 to 300) | 1x (3/0 to 300) | 2x (1 to 300)   | 2x (2/0 to 300) | 2x (3/0 to 300) | 2x (4/0 to 600) | 2X (250 to 600) | 2x (300 to 600) | 2x (350 to 600) |

### Motor Terminals



Models: GPR/GPS

### ALUMINUM CONDUCTORS for Contactor (1M).\*\*\*

Field Wiring According to Bending Space (AWG or MCM). Terminals T1 - T2 - T3

| HP<br>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 (3 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 (4 to 2/0) ** | 1x (4 to 2/0) **   | 1x (2 to 2/0) ** | 1x (1 to 2/0) ** | 1x (1/0 to 2/0) |
| 440 to 480    | 1x (12 to 2/0) ** | 1x (12 to 2/0) ** | 1x (10 to 2/0) ** | 1x (8 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 to 2/0)   |
| 600           | 1x (12 to 2/0) ** | 1x (12 to 2/0) ** | 1x (12 to 2/0) ** | 1x (10 to 2/0) ** | 1x (8 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 2/0)   |

| HP<br>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)        | 2x (500 to 600) | 2x (600)        | 2x (600) 90°C * | 2x (600) 90°C * | -----           |
| 440 to 480    | 1x (1/0 to 2/0) | 1x (3/0)        | 1x (250 to 300) | 1x (300)        | 2x (3/0 to 300) | 2x (250 to 300) | 2x (300 to 600) | 2x (400 to 600) | 2x (500 to 600) | 2x (600)        | 2x (600) 90°C * |
| 600           | 1x (1 to 2/0)   | 1x (2/0 to 3/0) | 1x (4/0 to 300) | 1x (4/0 to 300) | 2x (1/0 to 300) | 2x (3/0 to 300) | 2x (4/0 to 300) | 2x (300 to 600) | 2x (350 to 600) | 2x (400 to 600) | 2x (500 to 600) |

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

\*\* Option V659 required.

\*\*\* Aluminum is not permitted in Canada.

#### Notes:

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

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FINAL APPROVAL FC 19/12/23

## ELECTRIC FIRE PUMP CONTROLLER

**MODEL:GPX**

BUILT TO THE LATEST EDITION OF THE NFPA20 & NFPA70

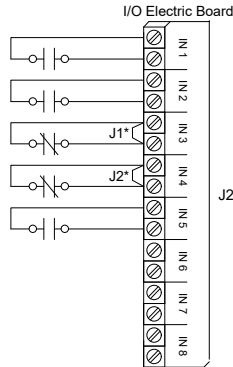


DRAWING NUMBER  
**GPX-TD803/E**  
DWG REV. 0  
SHEET 1 OF 1

### Field Connections

Terminals Wire Size:  
24 - 12 AWG  
0.5 Nm

Remote Manual  
Lockout  
Remote Auto  
Deluge Valve  
Low Water Level



### 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

Controller Terminal Strip

Motor Run

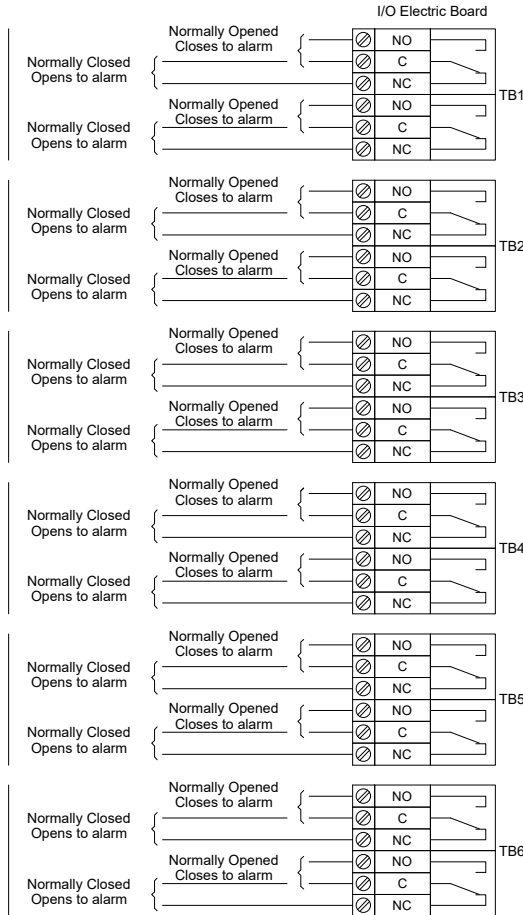
Power Available

Normal Power  
Phase Reversal

Pump Room Alarm\*\*

Motor Trouble\*\*

(Field Programmable\*\*\*)



\* Remove jumper to use this feature  
\*\* Re-assignable  
\*\*\* Not available on GPS models





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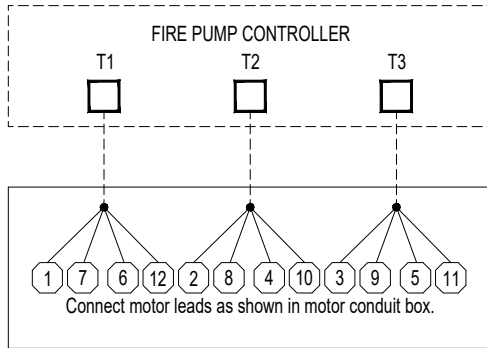
## ELECTRIC FIRE PUMP CONTROLLER MOTOR CONNECTIONS

**MODEL: GPA/GPR/GPS**

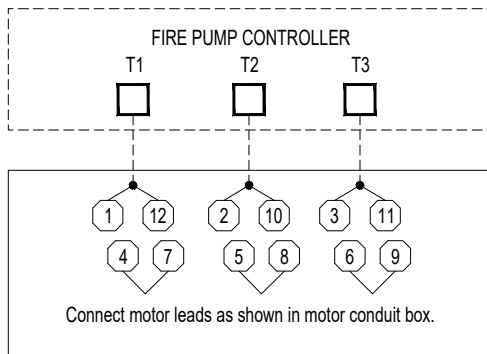
DRAWING NUMBER  
GPX-MC001/E  
DWG REV. 2  
SHEET 1 OF 1

**IMPORTANT : - NFPA 20-2022 Art. 9.5.3.2 :**

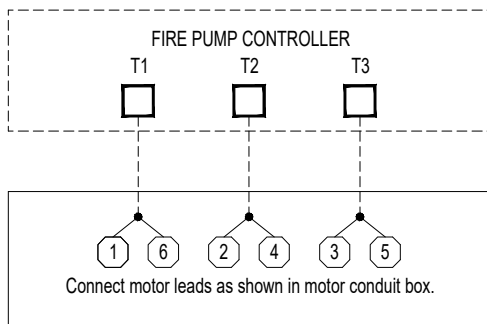
**A MOTOR TERMINAL CONNECTING DIAGRAM FOR MULTIPLE LEAD  
MOTORS SHALL BE FURNISHED BY THE MOTOR MANUFACTURER.**



12 LEADS MOTOR  
FOR DUAL VOLTAGE MOTOR  
OPERATING ON THE LOWER  
OF THE TWO VOLTAGES



12 LEADS MOTOR  
FOR DUAL VOLTAGE MOTOR  
OPERATING ON THE HIGHER  
OF THE TWO VOLTAGES



6 LEADS MOTOR  
FOR DELTA CONNECTION

**Tornatech Inc. ASSUMES NO  
LIABILITY FOR INCORRECT WIRING  
OF THE MOTOR TO THE  
CONTROLLER**

**WARNING :**

- THIS DRAWING IS FOR GENERAL INFORMATION.
- CONSULT MOTOR MANUFACTURER BEFORE CONNECTING TO CONTROLLER.
- CONNECT MOTOR LEADS AS SHOWN IN MOTOR CONDUIT BOX