Technical Data Submittal Document

Model GPY + GPU
Full Service Reduced Voltage
Wye-delta Open
Electric Fire Pump Controller
with Automatic Power Transfer Switch

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.
Technical Data
Model GPY + GPU Electric Fire Pump Controller with Automatic Power Transfer Switch

Standard, Listings, Approvals and Certifications
- Built to NFPA 20 (latest edition)
- Underwriters Laboratory (UL) • UL218 - Fire Pump Controllers • UL 1008 - Automatic power transfer switches for fire pump controllers • CSA C22.2 No. 14 Industrial Control Equipment
- FM Global Class 1321/1323
- New York City Accepted for use in the City of New York by the Department of Buildings
- Seismic Certification See page 6 for details
- Optional □ CE Mark Various EN, IEC & CEE directives and standards

Protection Rating
- Standard: NEMA 2 (IP31)
- 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

Enclosure
- Protection Rating □ Standard: NEMA 2 (IP31)
- 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

Starting Method: Reduced Voltage
- Wye-delta open

Typical Voltage Applied at Start: 100%
Inrush Current: 33% of normal load current
Starting Torque: 33%
Motor Type: Wye-delta
No. of Contactors: 2 at 58%, 1 at 33% of motor FLC
Min. ampacity of motor conductors: 6 at 125% x 58% of FLC

*Please see Disconnecting Means details on page 3.
### Technical Data
Model GPY + GPU Electric Fire Pump Controller with Automatic Power Transfer Switch

#### Short Circuit Withstand Rating

<table>
<thead>
<tr>
<th>HP (kw)</th>
<th>200V to 208V 60Hz</th>
<th>220V to 240V 60Hz</th>
<th>380V to 416V 50Hz / 60Hz</th>
<th>440V to 480V 60Hz</th>
<th>575V to 600V 60Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 100kA</td>
<td>5-150 (3.7 - 110)</td>
<td>5-200 (3.7 - 147)</td>
<td>5-300 (3.7 - 220)</td>
<td>5-450 (3.7 - 335)</td>
<td>n/a</td>
</tr>
<tr>
<td>Optional 150kA</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Standard 50kA</td>
<td>200 (147)</td>
<td>250 (184)</td>
<td>350 - 450 (257-335)</td>
<td>500 (373)</td>
<td>5-500 (3.7 - 373)</td>
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<tr>
<td>Optional 100kA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>

#### Surge Suppression
Surge arrester 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
- Pull and latch activation
- Across the line start (direct on line)

#### Locked Rotor Protector
- Operate shunt trip to open circuit breaker
- Factory set at 600% of motor full load current
- Trip between 8 and 20 seconds

#### 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 can be stored in memory for up to 5 years.
- 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

**Ambient Temperature Rating**
- **Standard:** 5°C to 40°C / 41°F to 104°F
- **Optional:** 5°C to 55°C / 41°F to 131°F

**July 2016**
<table>
<thead>
<tr>
<th>Audible Alarm</th>
<th>4” alarm bell - 85 dB at 10ft. (3m)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Indications &amp; Alarms</strong></td>
<td><strong>Remote Alarm Contacts</strong></td>
</tr>
<tr>
<td>• Power available</td>
<td>SPDT-8A-250V.AC</td>
</tr>
<tr>
<td>• Phase reversal</td>
<td>• Power available</td>
</tr>
<tr>
<td>• Motor run</td>
<td>• Phase reversal</td>
</tr>
<tr>
<td>• Pump room alarm</td>
<td>• Motor run</td>
</tr>
<tr>
<td>• Motor trouble</td>
<td>• Common pump room alarm (field re-assignable)**</td>
</tr>
<tr>
<td>• Phase loss</td>
<td>• Overvoltage</td>
</tr>
<tr>
<td>• Phase unbalance</td>
<td>• Undervoltage</td>
</tr>
<tr>
<td>• Low water level</td>
<td>• Low pump room temperature</td>
</tr>
<tr>
<td><strong>Remote Alarm Contacts</strong></td>
<td>• High Pump room temperature</td>
</tr>
<tr>
<td>• Locked rotor</td>
<td>• Common motor trouble (field re-assignable)**</td>
</tr>
<tr>
<td>• Periodic test</td>
<td>• Overcurrent</td>
</tr>
<tr>
<td>• Fail to start</td>
<td>• Undercurrent</td>
</tr>
<tr>
<td>• Low discharge pressure</td>
<td>• Ground fault</td>
</tr>
<tr>
<td>• Low pump room temperature</td>
<td>• Free (field programmable)**</td>
</tr>
<tr>
<td>• Pump room temperature (°F or °C)</td>
<td>• Overvoltage</td>
</tr>
<tr>
<td>• Pump on demand/Automatic start</td>
<td>• Phase unbalance</td>
</tr>
<tr>
<td>• Emergency start</td>
<td><strong>ViZITouch Operator Interface</strong></td>
</tr>
<tr>
<td>• Manual start</td>
<td>• Embedded microcomputer with software PLC logic</td>
</tr>
<tr>
<td>• Deluge valve start</td>
<td>• 4.2” color touch screen (HMI technology)</td>
</tr>
<tr>
<td>• Remote automatic start</td>
<td>• Upgradable software</td>
</tr>
<tr>
<td>• Remote manual start</td>
<td>• Expandable storage</td>
</tr>
<tr>
<td>• Overcurrent</td>
<td>• Multi-language</td>
</tr>
<tr>
<td>• Undervoltage</td>
<td><strong>Communication Protocol Capability</strong></td>
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<tr>
<td>• Phase unbalance</td>
<td>• Protocol: Modbus</td>
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<tr>
<td><strong>Communication Protocol Capability</strong></td>
<td>• Connection type: Shielded female connector RJ45</td>
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<td>• Field Adjustable &amp; Visual Countdown</td>
<td>• Frame Format: TCP/IP</td>
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<tr>
<td>• Start on pressure drop</td>
<td>• Addresses: See bulletin MOD-GPx</td>
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<tr>
<td>• Remote start signal from automatic device</td>
<td><strong>Operation</strong></td>
</tr>
<tr>
<td><strong>Manual Start</strong></td>
<td><strong>Automatic Start</strong></td>
</tr>
<tr>
<td>• Start pushbutton</td>
<td>• Start on pressure drop</td>
</tr>
<tr>
<td>• Run test pushbutton</td>
<td>• Remote start signal from automatic device</td>
</tr>
<tr>
<td>• Deluge valve start</td>
<td><strong>Manual Start</strong></td>
</tr>
<tr>
<td>• Remote start from manual device</td>
<td>• Start pushbutton</td>
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<tr>
<td><strong>Stopping</strong></td>
<td>• Run test pushbutton</td>
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<tr>
<td>• Manual with Stop pushbutton</td>
<td>• Deluge valve start</td>
</tr>
<tr>
<td>• Automatic after expiration of minimum run timer ***</td>
<td>• Remote start from manual device</td>
</tr>
<tr>
<td><strong>Timers</strong></td>
<td><strong>Actuation</strong></td>
</tr>
<tr>
<td>Field Adjustable &amp; Visual Countdown</td>
<td>• Pressure</td>
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<tr>
<td>• Minimum run timer ***(off delay)</td>
<td>• Non-pressure</td>
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<tr>
<td>• Sequential start timer (on delay)</td>
<td><strong>Mode</strong></td>
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<tr>
<td>• Periodic test timer</td>
<td>• Automatic</td>
</tr>
<tr>
<td><strong>Actuation</strong></td>
<td>• Non-automatic</td>
</tr>
<tr>
<td><strong>ViZITouch Operator Interface</strong></td>
<td><strong>Mode</strong></td>
</tr>
<tr>
<td>• Embedded microcomputer with software PLC logic</td>
<td><strong>Audible Alarm</strong></td>
</tr>
<tr>
<td>• 4.2” color touch screen (HMI technology)</td>
<td>4” alarm bell - 85 dB at 10ft. (3m)</td>
</tr>
<tr>
<td>• Upgradable software</td>
<td><strong>Remote Alarm Contacts</strong></td>
</tr>
<tr>
<td>• Expandable storage</td>
<td>• Power available</td>
</tr>
<tr>
<td>• Multi-language</td>
<td>• Phase reversal</td>
</tr>
<tr>
<td><strong>Remote Alarm Contacts</strong></td>
<td>• Motor run</td>
</tr>
<tr>
<td>• Common pump room alarm (field re-assignable)**</td>
<td>• Overvoltage</td>
</tr>
<tr>
<td>• Overvoltage</td>
<td>• Undervoltage</td>
</tr>
<tr>
<td>• Low pump room temperature</td>
<td>• Phase unbalance</td>
</tr>
<tr>
<td>• High Pump room temperature</td>
<td><strong>ViZITouch Operator Interface</strong></td>
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<td>• Expandable storage</td>
<td>• 4.2” color touch screen (HMI technology)</td>
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<tr>
<td>• Multi-language</td>
<td>• Embedded microcomputer with software PLC logic</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>• 4.2” color touch screen (HMI technology)</td>
</tr>
<tr>
<td><strong>Automatic Start</strong></td>
<td>• 4.2” color touch screen (HMI technology)</td>
</tr>
<tr>
<td><strong>Manual Start</strong></td>
<td>• 4.2” color touch screen (HMI technology)</td>
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<tr>
<td><strong>Stopping</strong></td>
<td>• 4.2” color touch screen (HMI technology)</td>
</tr>
<tr>
<td><strong>Timers</strong></td>
<td>• 4.2” color touch screen (HMI technology)</td>
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<tr>
<td><strong>Actuation</strong></td>
<td>• 4.2” color touch screen (HMI technology)</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>• 4.2” color touch screen (HMI technology)</td>
</tr>
</tbody>
</table>

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

***Can only be used if approved by the AHJ
## Automatic Power Transfer Switch

<table>
<thead>
<tr>
<th>Surge Suppression</th>
<th>Surge arrestor rated to suppress surges above line voltage</th>
</tr>
</thead>
</table>
| **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 |
| **Locked Rotor Protector** | - Operate shunt trip to open circuit breaker  
- Factory set at 600% of motor full load current  
- Trip between 8 and 20 seconds |
| **Visual Indications** | - Alternate (emergency) isolating switch in the OFF position  
- Alternate (emergency) voltage phase to phase  
- Transfer switch in normal position  
- Transition timers |

- Transfer switch test pushbutton  
- Bypass for re-transfer and generator shutdown  
- Electrically operated and mechanically held in the normal or alternate position  
- Provision for manual operation  
- Remote Alarm Contacts  
  - SPDT-8A-250VAC  
    - Isolating switch in the OFF position  
    - Transfer switch in normal position  
    - Transfer switch in alternate (emergency) position  
- Time Delays  
  - Momentary normal power outage override (factory set at 3 sec - field adjustable 1 to 3 sec)  
  - Alternate (emergency) power available delay (factory set at 3 sec - field adjustable 1 to 3 sec)  
  - Transfer trouble delay (factory set at 20 sec - field adjustable 1 to 60 sec)  
  - Retransfer to normal (factory set at 5 min - field adjustable 1 to 20 min)  
  - Generator cooldown (factory set at 5 min - field adjustable 1 to 20 min)  
- Voltage Sensing  
  - Transfer to alternate (normal power dropout) 85% of nominal - field adjustable 0 to 100%  
  - Phase reversal transfer to alternate  
  - Retransfer to normal (normal power pickup) 90% of nominal - field adjustable 0 to 100%  
- Audible Alarm (AIS Open)  
  - 4” alarm bell - 85 dB at 10ft. (3m)  
- Generator Start Connection  
  - SPDT-8A-250VAC
## Technical Data

Model GPY + GPU Electric Fire Pump Controller

with Automatic Power Transfer Switch

### Seismic Certification

| Seismic Certification Company | TRU Compliance, LLC
A Tobalski Watkins Affiliate | TWEI Project No.: 15014 |

### Seismic Information

<table>
<thead>
<tr>
<th>Building Code</th>
<th>Test Criteria</th>
<th>Seismic Parameters</th>
<th>SDS</th>
<th>z/h</th>
<th>I_p</th>
<th>A_{FLX-H}</th>
<th>A_{RIG-H}</th>
<th>A_{FLX-V}</th>
<th>A_{RIG-V}</th>
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<tr>
<td>IBC 2015, CBC 2016</td>
<td>ICC-ES AC156</td>
<td>ASCE 7-10 Chapter 13</td>
<td>2.0</td>
<td>1.0</td>
<td>1.5</td>
<td>3.20</td>
<td>2.40</td>
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<td>0.53</td>
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<td>IBC</td>
<td>ICC-ES AC156</td>
<td>ASCE 7-10 Chapter 13</td>
<td>3.2</td>
<td>0.0</td>
<td>1.5</td>
<td>3.20</td>
<td>1.28</td>
<td>2.13</td>
<td>0.85</td>
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</tbody>
</table>

### RRS for Nonstructural Components Testing

![Graph showing spectral response acceleration (g) vs. frequency, f (Hz)](image)

- **Horiz. Level 1**
- **Vert. Level 1**

### Notes:

- Components are tested in accordance with ICC-ES AC156, IBC 2015 & CBC 2016.
- OSHPD Special Seismic Certification Preapproval (OSP)
## Technical Data

**Model GPY + GPU Electric Fire Pump Controller with Automatic Power Transfer Switch**

### Options

- **A4** Flow switch provision
- **A8** Foam pump application w/o pressure transducer and run test solenoid valve
- **A9** Low zone pump control function
- **A10** Middle zone pump control function
- **A11** High zone pump control function
- **A13** Non-pressure actuated controller w/o pressure transducer and run test solenoid valve
- **A16** Lockout/interlock circuit from equipment installed inside the pump room
- **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
- **B11B** Built in alarm panel same as B11 but 220-240VAC supervisory power
- **B19A** High motor temperature c/w thermoster relay and alarm contacts (Form C-SPDT)
- **B19B** High motor temperature c/w PT100 relay and alarm contacts (Form C-SPDT)
- **B21** Ground fault alarm detection c/w visual indication and alarm contact (Form C-SPDT)
- **C1** Extra motor run alarm contact (Form C-SPDT)
- **C4** Periodic test alarm contact (Form C-SPDT)
- **C6** Low discharge pressure alarm contact (Form C-SPDT)
- **C7** Low pump room temperature alarm contact (Form C-SPDT)
- **C10** Low water reservoir level alarm contact (Form C-SPDT)
- **C11** High electric motor temperature alarm contact (Form C-SPDT)
- **C12** High electric motor vibration c/w visual indication and alarm contact (Form C-SPDT)
- **C14** Pump on demand / automatic start alarm contact (Form C-SPDT)
- **C15** Pump fail to start alarm contact (Form C-SPDT)
- **C16** Control voltage healthy alarm contact (Form C-SPDT)
- **C17** Flow meter valve loop open c/w visual indication and alarm contact (Form C-SPDT)
- **C18** High water reservoir level c/w visual indication and alarm contact (Form C-SPDT)
- **C19** Emergency start alarm contact (Form C-SPDT)
- **C20** Manual start alarm contact (Form C-SPDT)
- **C21** Deluge valve start alarm contact (Form C-SPDT)
- **C22** Remote automatic start alarm contact (Form C-SPDT)
- **C23** Remote manual start alarm contact (Form C-SPDT)
- **C24** High pump room temperature alarm contact (Form C-SPDT)
- **C25** Second set of standard alarm contacts (Form C-SPDT) (Typical for city of Los Angeles and Denver)
- **C26** Non-pressure actuated controller w/o pressure transducer and run test solenoid valve
- **C28** Customized drawing set
- **C29** Field programmable I/O board - 8 Input / 5 output
- **C30** Field programmable I/O board - 8 Input / 10 output
- **C31** Redundant pressure transducer for fresh water rated for 0-500PSI
- **C31A** Redundant pressure transducer for sea water rated for 0-500PSI
- **C32** Window kit for operator interface
- **C33** Permanent load shedding contacts
- **C34** Temporary pump motor start period load shedding contacts
- **C35** Temporary & permanent load shedding contacts
- **C36** Anti condensation heater & thermostat (alternate power section)
- **C36A** Anti condensation heater & humidistat (alternate power section)
- **C37** Anti condensation heater & thermostat & humidistat (alternate power section)
- **C38** Anti condensation heater & humidistat (alternate power section)
- **C39** Anti condensation heater & thermostat & humidistat (alternate power section)
- **C40** Anti condensation heater & humidistat (alternate power section)
- **C41** Anti condensation heater & humidistat (alternate power section)
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- **C58** Anti condensation heater & humidistat (alternate power section)
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- **C61** Anti condensation heater & humidistat (alternate power section)
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- **C65** Anti condensation heater & humidistat (alternate power section)
- **C66** Anti condensation heater & humidistat (alternate power section)
- **C67** Anti condensation heater & humidistat (alternate power section)
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- **C81** Anti condensation heater & humidistat (alternate power section)
- **C82** Anti condensation heater & humidistat (alternate power section)
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- **C84** Anti condensation heater & humidistat (alternate power section)
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- **C86** Anti condensation heater & humidistat (alternate power section)
- **C87** Anti condensation heater & humidistat (alternate power section)
- **C88** Anti condensation heater & humidistat (alternate power section)
- **C89** Anti condensation heater & humidistat (alternate power section)
- **C90** Anti condensation heater & humidistat (alternate power section)
- **C91** Anti condensation heater & humidistat (alternate power section)
- **C92** Anti condensation heater & humidistat (alternate power section)
- **C93** Anti condensation heater & humidistat (alternate power section)
- **C94** Anti condensation heater & humidistat (alternate power section)
- **C95** Anti condensation heater & humidistat (alternate power section)
- **C96** Anti condensation heater & humidistat (alternate power section)
- **C97** Anti condensation heater & humidistat (alternate power section)
- **C98** Anti condensation heater & humidistat (alternate power section)
- **C99** Anti condensation heater & humidistat (alternate power section)
- **C100** Anti condensation heater & humidistat (alternate power section)

**Note:** Options chosen from this page are not electrically represented on the wiring schematics in this submittal package.
Technical Data
Model GPY + GPU Electric Fire Pump Controller
with Automatic Power Transfer Switch

<table>
<thead>
<tr>
<th>Language Code</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>L01</td>
<td>Other language and English (bilingual)</td>
</tr>
<tr>
<td>L02</td>
<td>French</td>
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<td>L13</td>
<td>Dutch</td>
</tr>
<tr>
<td>L14</td>
<td>Russian</td>
</tr>
<tr>
<td>L15</td>
<td>Turkish</td>
</tr>
<tr>
<td>L16</td>
<td>Swedish</td>
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<tr>
<td>L17</td>
<td>Bulgarian</td>
</tr>
<tr>
<td>L18</td>
<td>Thai</td>
</tr>
<tr>
<td>L19</td>
<td>Indonesian</td>
</tr>
<tr>
<td>L20</td>
<td>Slovenian</td>
</tr>
<tr>
<td>L21</td>
<td>Danish</td>
</tr>
<tr>
<td>L22</td>
<td>Greek</td>
</tr>
<tr>
<td>L23</td>
<td>Arabic</td>
</tr>
<tr>
<td>L24</td>
<td>Hebrew</td>
</tr>
<tr>
<td>L25</td>
<td>Chinese</td>
</tr>
</tbody>
</table>

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

1 - Power on LED
2 - Color touch screen
3 - Alarm LED
4 - HOME page button
5 - ALARM page button
6 - CONFIGURATION page button
7 - HISTORY page button
8 - USB port
9 - START button
10 - TRANSFER SWITCH TEST button
11 - Contextual navigation pad
12 - STOP button
13 - RUN TEST button
14 - HELP button
Electric Fire Pump Controller
With Automatic Transfer Switch

Dimensions

Model: GPA/GPP/GPY
+GPU

Built to the latest edition of the NFPA 20 standard

Voltage / Power Table

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Min HP</th>
<th>Max HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>208</td>
<td>75</td>
<td>150</td>
</tr>
<tr>
<td>220 - 240</td>
<td>75</td>
<td>150</td>
</tr>
<tr>
<td>380 - 400 - 415</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>440 - 480</td>
<td>200</td>
<td>350</td>
</tr>
<tr>
<td>600</td>
<td>200</td>
<td>450</td>
</tr>
</tbody>
</table>

Notes:
- Standard NEMA: NEMA 2
- All Dimensions are in Inches [Millimeters].
- 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.
- Seismic mounting to be rigid wall and base only.

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Electric Fire Pump Controller
Reduced Voltage / Wye-Delta (Open Transition)
With Automatic Transfer Switch

Model: GPY+GPU

Built to the latest edition of the NFPA 20 standard

Wiring schematic

* REMOVE JUMPER TO USE THIS FEATURE

* Contact closed when Emergency Start is in ON position

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**Electric Fire Pump Controller**

**Model: GPX**

**Terminals Diagram and Sizing**

Built to the latest edition of the NFPA 20 standard

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**Power Terminals**

Models: GPA, GPR & GPS

---

### Isolating Switch (IS) Field Wiring according to Bending Space (AWG or MCM), TERMINALS L1 - L2 - L3

(Use Copper Conductors Only)

<table>
<thead>
<tr>
<th>Bending Space</th>
<th>5&quot; (127 mm)</th>
<th>8&quot; (203 mm)</th>
<th>12&quot; (305 mm)</th>
<th>16&quot; (406 mm)</th>
<th>18&quot; (460 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Voltage</td>
<td>5</td>
<td>7.5</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>208</td>
<td>1x (10 to 1/0)</td>
<td>1x (8 to 1/0)</td>
<td>1x (8 to 1/0)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
</tr>
<tr>
<td>220 to 240</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (8 to 1/0)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
</tr>
<tr>
<td>380 to 416</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (8 to 1/0)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
</tr>
<tr>
<td>440 to 480</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (8 to 1/0)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
</tr>
<tr>
<td>600</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (8 to 1/0)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
</tr>
</tbody>
</table>

---

### Wiring Size for motor connection for Models GPA, GPR & GPS (AWG or MCM), TERMINALS T1 - T2 - T3

(Use Copper Conductors Only)

<table>
<thead>
<tr>
<th>HP Voltage</th>
<th>5</th>
<th>7.5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>208</td>
<td>1x (10)</td>
<td>1x (10)</td>
<td>1x (8 to 2)</td>
<td>1x (6 to 2)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
<td>1x (2 to 1/0)</td>
<td>1x (1/0 to 3/0)</td>
<td>1x (300)</td>
<td>1x (4/0 to 300)</td>
</tr>
<tr>
<td>220 to 240</td>
<td>1x (12 to 10)</td>
<td>1x (10)</td>
<td>1x (8 to 2)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
<td>1x (1/0 to 3/0)</td>
<td>1x (300)</td>
<td>1x (4/0 to 300)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>380 to 416</td>
<td>1x (14 to 10)</td>
<td>1x (12 to 10)</td>
<td>1x (8 to 2)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
<td>1x (1/0 to 3/0)</td>
<td>1x (300)</td>
<td>1x (4/0 to 300)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>440 to 480</td>
<td>1x (14 to 10)</td>
<td>1x (14 to 10)</td>
<td>1x (12 to 10)</td>
<td>1x (10)</td>
<td>1x (8 to 2)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
<td>1x (300)</td>
<td>1x (4/0 to 300)</td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>1x (14 to 10)</td>
<td>1x (14 to 10)</td>
<td>1x (14 to 10)</td>
<td>1x (10)</td>
<td>1x (8 to 2)</td>
<td>1x (4 to 1/0)</td>
<td>1x (3 to 1/0)</td>
<td>1x (300)</td>
<td>1x (4/0 to 300)</td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes:**

1. For proper wire sizing, refer to NFPA 70 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.
5. Field wiring and lug sizes base on copper conductors only. Do not use aluminum conductors.

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**Drawing for information only.**

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## Electric Fire Pump Controller

### Model: GPX

**Drawn to the latest edition of the NFPA 20 standard**

### Terminals Diagram and Sizing

#### Power Terminals

<table>
<thead>
<tr>
<th>HP Voltage</th>
<th>5&quot; (127 mm)</th>
<th>8&quot; (203 mm)</th>
<th>10&quot; (305 mm)</th>
<th>16&quot; (406 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>208</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
</tr>
<tr>
<td>220 to 240</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
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<td>1x (10 to 1/0)</td>
</tr>
<tr>
<td>380 to 416</td>
<td>1x (10 to 1/0)</td>
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<td>1x (10 to 1/0)</td>
</tr>
<tr>
<td>440 to 480</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
</tr>
<tr>
<td>600</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
</tr>
</tbody>
</table>

#### Isolating Switch (IS) Field Wiring according to Bending Space (AWG or MCM), TERMINALS L1 - L2 - L3

- Use Copper Conductors Only

### Wiring Size for motor connection for Models GPP, GPW & GPY (AWG or MCM), TERMINALS T1 - T2 - T3 - T4 - T5 - T6 - T7 - T8

#### HP Voltage

<table>
<thead>
<tr>
<th>HP Voltage</th>
<th>5&quot; (127 mm)</th>
<th>8&quot; (203 mm)</th>
<th>10&quot; (305 mm)</th>
<th>12&quot; (305 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>208</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
</tr>
<tr>
<td>220 to 240</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
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<tr>
<td>380 to 416</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
</tr>
<tr>
<td>440 to 480</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
</tr>
<tr>
<td>600</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 1/0)</td>
</tr>
</tbody>
</table>

**Notes:**
1. For proper wire sizing, refer to NFPA70 and NEC (USA) or CEC (Canada) or local code.
2. Field wiring and lug sizes base on copper conductors only. Do not use aluminum conductors.
3. Controller is phase sensitive.Incoming lines must be connected in ABC sequence.

---

### Additional Information

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Remote Alarm Terminals (I/O board)

Motor Running
- Normally closed
- Opens to alarm

Control Terminals (I/O board)

Remote Manual Start
- Close to start pump

Power Available (Fail Safe)
- Normally closed
- Opens to alarm

Remote Automatic Start
- If used, remove jumper J1

Phase Reversal
- Normally closed
- Opens to alarm

Automatic Start
- Close to block start

Pump Room Alarm
- Normally closed
- Opens to alarm

Remote Alarm Terminals (I/O board)

Deluge Valve Signal
- If used, remove jumper J2

Motor Trouble
- Normally closed
- Opens to alarm

Water Reservoir Low Signal
- Close to signal alarm

(Field* Programmable)
- Normally closed
- Opens to alarm

Flow / Zone Start / Stop Signal
- Close to signal alarm

Terminals Wire Size:
- 12 - 24 AWG
- 0.5 Nm

Field Connections for External Devices (I/O board)

Water Reservoir Low
- J14 - 14
- J14 - 11
- J14 - 12

Terminals Wire Size:
- 12 - 24 AWG
- 0.5 Nm

*Not Available in GPS Models

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### Power Terminals

- **Bonding Ground**
- **3 Phases Incoming Power**
- **Gnd AL1 AL2 AL3**

#### Notes:
1. Controller is phase sensitive. Incoming lines must be connected in ABC.
2. Field wiring and lug sizes base on copper conductors only.
   Do not use aluminium conductors.

#### Isolating Switch (IS) Field Wiring according to Bending Space (AWG or MCM)

<table>
<thead>
<tr>
<th>Bending Space (HP Voltage)</th>
<th>5&quot; (127 mm)</th>
<th>8&quot; (203 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>208</td>
<td>1x (10 to 1/0)</td>
<td>1x (10 to 10)</td>
</tr>
<tr>
<td>220 to 246</td>
<td>1x (10 to 10)</td>
<td>1x (10 to 10)</td>
</tr>
<tr>
<td>380 to 416</td>
<td>1x (10 to 10)</td>
<td>1x (10 to 10)</td>
</tr>
<tr>
<td>440 to 480</td>
<td>1x (10 to 10)</td>
<td>1x (10 to 10)</td>
</tr>
<tr>
<td>600</td>
<td>1x (10 to 10)</td>
<td>1x (10 to 10)</td>
</tr>
</tbody>
</table>

#### Remote Alarm Terminal (I/O board Tr. Sw.)

- **Closes when Tr. Sw. in Alternate Position**
- **Opens when Tr. Sw. in Alternate Position**
- **Closes when Tr. Sw. in Normal Position**
- **Opens when Tr. Sw. in Normal Position**
- **Opens when ACB is in OFF or Tripped**
- **Closes when ACB is in OFF or Tripped**

#### Field Connections for External Devices (I/O board Tr. Sw.)

- **Generator Set**
- **Normally closed**
  - Opens to start generator
- **Normally open**
  - Closes to start generator