TECHNOLOGIC
Intelligent Variable Speed Control

The TECHNOLOGIC Intelligent Pump Controller from Bell & Gossett® combines a market-leading variable speed drive with over 100 years of experience in designing and installing high performance pumping systems in commercial buildings. The TECHNOLOGIC provides variable speed pumping to control speed, pressure, flow and level over a wide range of Hydronic system applications. A few features of this versatile product include:

- Quick set-up Genie for fast system configuration
- Continuous scrolling menu to ensure no parameters are left out during programming
- Pump and system protection parameters designed specifically around hydronic systems
- Service and support from pump and system experts
- Communicate directly with BMS over Modbus, BACNet or N2 Metasys FLN
- Alarm Log key for quick access to last 5 alarms and maintenance events
- Hand on, Auto on, and Off buttons for easy pump operation at the keypad - No toggling between local and remote operation
- Duplex, alternation, and speed synchronization pumping control with auto lead/lag and alternate
- Constant speed lag control. Able to control 1 variable speed pump with up to 2 fixed speed lag pumps triggered by relays
- USB Connectivity supports remote diagnostics through PC software
- Dual DC-link reactors standard reduces harmonics to the level of a 5% AC line reactor without the voltage drop across the full load range
- EMC/RFI filters designed to reduce drive noise emissions and interference to strict standards
- Automatic Energy Optimization - Regulates output voltage to improve system efficiency as loads change
- By Pass panel option for across-the-line motor operation
- Built-in Pump Protection for end of curve, flow compensation and no/low flow
**KEYPAD LAYOUT**

- **Real Time Drive Status**
- **Actual System Pressure and Setpoint Pressure Display**
- **Quick access to Start-Up Genie, Personal Menu and drive parameters**
- **4-way directional buttons for scrolling parameters**
- **LEDs for On, Warning and Alarm**
- **Info button provides on-board descriptions of parameters**
- **Easily accessible Hand/Off/Auto Buttons**
- **Alarm Reset**
SPECIFICATIONS

Ratings and Enclosures
- IP20 Open, TYPE 1, TYPE 12, TYPE 3R, TYPE 4X
- 1.5 HP- 125 HP - wall or floor mounted
  150 HP- 600 HP - wall or floor mounted
- Relative humidity lower than 95% without condensation
- Ambient temperature 14º F - 113º F (-10ºC - 45ºC). Higher temperatures can be achieved by derating the output amperage of the drive 10% for up to 122º F (50ºC).
- At altitudes from 0 to 1000 meters (0 to 3300 feet) rated current is available. For altitudes above 1000 meters (3300 feet) use table listed below. Maximum 3000 meters (9900 feet). (Consult factory above 3000 meters (9900 feet)). See chart below for derate in % of output current.

![Graph showing I_OUTPUT(%) vs Altitude (meters above sea level)*](image)

Electrical Characteristics

INPUT POWER
- 3 phase 380 V to 480 V ±10%
- 1 phase 200 V to 240 V ±10%
- 3 phase 200 V to 240 V ±10%
- 3 phase 525 V to 600 V ±10%
- Frequency 50 or 60 Hz, ±2Hz

OUTPUT POWER
- 3 phase from 0 to Vsupply
- 0 to 120 Hz frequency
BUILT-IN CONTROL CONNECTIONS

- Analog input: 1 fixed 4-20 MA, 1 0-10 VDC or 4-20MA
- Programmable digital inputs: 6, 2 can be used as digital outputs
- Programmable Analog outputs: 1, 0-10 V DC or 4 - 20 mA
- Programmable relay outputs: 2, standard Form C, 240 VAC, 2 A
- Auxiliary voltage: +24 V DC, maximum 200 mA

PUMP AND MOTOR PROTECTIONS

**Motor Protections**
- Ground Fault
- Motor Stall
- Motor Over Temperature (Predictive and Sensor Based)
- Motor Condensation (Motor Preheat Circuit)
- Motor Overload (Programmable Action)

**Pump Protections**
- Pump No-Flow
- Under Pressure
- No Water / Loss of Prime
- Short-Cycle
- Vibration (Programming Automated)

COMMUNICATION OPTIONS (Repair Part Number)

<table>
<thead>
<tr>
<th>Modbus TCP (P2002909)</th>
<th>DeviceNet (P2002911)</th>
<th>Profinet (P2002913)</th>
<th>Bacnet IP (P2002957)</th>
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<tbody>
<tr>
<td>Profibus (P2002910)</td>
<td>LonWorks (P2002912)</td>
<td>Ethernet IP (P2002914)</td>
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</table>
INTELLIGENT PUMP CONTROLLER EXPANSION CARDS:
Expansion cards are ordered as a field installable option using the part numbers listed.

INPUT/OUTPUT OPTIONS (Repair Part Number)

ANALOG I/O CARD (P2002901)

Includes: 3 Analog IN for 0 - 10VDC
OR
0-20mA*
4-20mA*
Ni1000 Temperature Sensor
Pt1000 Temperature Sensor
3 Analog OUT for 0 - 10VDC
Battery backup for real-time clock

Used for: Providing battery backup of clock function during loss of power (real-time clock is native to the drive, and will reset to zero during power outage without Analog I/O card.)
Extension of analog I/O on control card (multi zone with 3 sensors)
Extended PID controllers with I/O’s (set point inputs, sensor inputs and outputs)

GENERAL I/O CARD (P2002902)

Includes: 3 Digital IN, 2 Digital OUT, 2 Analog IN (voltage), 1 Analog OUT (current)

Used for: Extension of number of digital and analog inputs and outputs
INPUT/OUTPUT OPTIONS (continued)

**PTC THERMISTOR CARD (P2002903)**

Includes: Twelve terminal PTC card  
Used for: Monitor temperature of electric motor with PTC thermistor input (PTC Thermistor Card option is certified for ATEX for use with motors in potentially explosive atmospheres.)

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<td>Reference for 10, 12</td>
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<tr>
<td>10</td>
<td>20-28 VDC</td>
<td>10 mA</td>
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<tr>
<td>12</td>
<td>20-28 VDC</td>
<td>60 mA</td>
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**PT100 SENSOR INPUT CARD (P2002904)**

Includes: Twelve terminal PTC100 card  
Used for: Sensor Input for PT100 and PT1000 temperature sensors for motor bearing temperatures

**PT 100 Sensor Input Option B**

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<tr>
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<td>1 IN</td>
<td>GND TEMP WIRE</td>
<td>GND TEMP WIRE</td>
<td>GND TEMP WIRE</td>
<td>GND</td>
<td></td>
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<tr>
<td>X48/</td>
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<td>3</td>
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<td>7</td>
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INPUT/OUTPUT OPTIONS (continued)

RELAY CARD (P2002905)

Includes: 3 standard Form C, 240 VAC, 2 A
Used for: Extension of the number of output relays

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<tr>
<td>10</td>
<td>11</td>
<td>12</td>
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</table>

NC
NC

BACKUP OPTIONS

24VDC BACKUP (P2002906)

Includes: Positive and Negative Terminals for 24VDC
Used for: Interface to external 24 VDC auxiliary power supply
(Enables full LCP operation without line voltage supplied.)

Connection to 24V Backup Supplier (A5-C2)
DISCONNECT OPTIONS

STANDARD DISCONNECT (SD) – Included

FUSED DISCONNECT (FD) - Optional

Available in these enclosures: NEMA 1, NEMA 3R, NEMA 12 and NEMA 4X.

Standard disconnect only available on single phase input drives.

Used for: Local disconnect of supply power to the drive.

MOTOR MOUNTING OPTIONS

MOTOR MOUNTING

Includes: Two motor mounting plate adapters sized for motors 56C through 440 frame

Used for: Intended for motor mounting of the VFD. Requires a vertical configuration and the vertical motor to have a mounting foot. The Technologic with adapter plates mounts right to the motor foot!

DV/DT FILTERS* (ORDER SEPARATELY)

Includes: NEMA 3R dv/dt filter

Used for: Provides motor protection by limiting voltage spikes below 1,000 volts for long lead (submersible) applications.

FEATURES:

• 2 – 130 amps; 240V - 600V; 2 - 450 HP
• NEMA 3R Enclosure
• Carrier Frequency: 1 - 12 kHz
• Fundamental Frequency: 0 - 60 Hz
• Efficiency: > 98%
• Insulation Rating 600V Class
• Agency Approvals: UL, cUL
• Maximum Altitude: 6,000 feet
  ○ (Derate for applications above 6,000 feet)

* dv/dt filters are recommended on all pumping applications with Motor leads longer than 50’
### MECHANICAL DIMENSIONS

<table>
<thead>
<tr>
<th>Frame size (HP):</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
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<tbody>
<tr>
<td>208-230V</td>
<td>1.5-3</td>
<td>5</td>
<td>1.5-3</td>
<td>1.5-3</td>
<td>7.5-15</td>
<td>20</td>
<td>7.5-15</td>
<td>20-25</td>
<td>25-40</td>
<td>50-60</td>
<td>50-60</td>
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</tr>
<tr>
<td>380-460V</td>
<td>1.5-5</td>
<td>7.5-10</td>
<td>1.5-5</td>
<td>1.5-10</td>
<td>15-25</td>
<td>30-40</td>
<td>15-25</td>
<td>30-50</td>
<td>50-75</td>
<td>100-125</td>
<td>60-75</td>
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<tr>
<td>575V</td>
<td>1.5-10</td>
<td>1.5-10</td>
<td>1.5-10</td>
<td>15-25</td>
<td>15-40</td>
<td>30-50</td>
<td>50-75</td>
<td>50-125</td>
<td>60-75</td>
<td>100-125</td>
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**Enclosure Options**

<table>
<thead>
<tr>
<th>Height in (mm)</th>
<th>IP20 OPEN</th>
<th>TYPE 1</th>
<th>IP20 OPEN</th>
<th>TYPE 1</th>
<th>TYPE 12 TYPE 3R TYPE 4X</th>
<th>TYPE 12 TYPE 3R TYPE 4X</th>
<th>TYPE 12 TYPE 3R TYPE 4X</th>
<th>TYPE 12 TYPE 12 TYPE 3R TYPE 4X</th>
<th>IP20 OPEN</th>
<th>IP20 OPEN</th>
<th>IP20 OPEN</th>
<th>IP20 OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure</td>
<td>9.69 (246)</td>
<td>14.65 (372)</td>
<td>9.69 (246)</td>
<td>14.65 (372)</td>
<td>15.35 (390)</td>
<td>16.54 (420)</td>
<td>18.90 (480)</td>
<td>25.59 (650)</td>
<td>13.78 (350)</td>
<td>18.11 (460)</td>
<td>26.77 (680)</td>
<td>30.31 (770)</td>
</tr>
<tr>
<td>with De-coupling Plate</td>
<td>14.72 (374)</td>
<td>-</td>
<td>14.72 (374)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>16.5 (419)</td>
<td>23.43 (595)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Backplate</td>
<td>10.55 (268)</td>
<td>14.76 (375)</td>
<td>10.55 (268)</td>
<td>14.76 (375)</td>
<td>15.35 (390)</td>
<td>16.54 (420)</td>
<td>18.90 (480)</td>
<td>25.59 (650)</td>
<td>15.71 (399)</td>
<td>20.47 (520)</td>
<td>26.77 (680)</td>
<td>30.31 (770)</td>
</tr>
<tr>
<td>Distance Between Mounting Holes</td>
<td>10.12 (257)</td>
<td>13.78 (350)</td>
<td>10.12 (257)</td>
<td>13.78 (350)</td>
<td>15.79 (401)</td>
<td>15.83 (402)</td>
<td>17.87 (454)</td>
<td>24.57 (624)</td>
<td>14.96 (380)</td>
<td>19.49 (495)</td>
<td>25.51 (648)</td>
<td>29.09 (739)</td>
</tr>
</tbody>
</table>

**Width in (mm)**

| Enclosure | 3.54 (90) | 3.54 (90) | 5.12 (130) | 5.12 (130) | 7.87 (200) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 6.50 (165) | 9.09 (231) | 12.13 (308) | 14.57 (370) | 14.57 (370) |
| Backplate | 3.54 (90) | 3.54 (90) | 5.12 (130) | 5.12 (130) | 7.87 (200) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 6.50 (165) | 9.09 (231) | 12.13 (308) | 14.57 (370) | 14.57 (370) |
| Distance Between Mounting Holes | 2.76 (70) | 2.76 (70) | 4.33 (110) | 4.33 (110) | 6.73 (171) | 8.46 (215) | 8.27 (210) | 8.27 (210) | 5.51 (140) | 7.87 (200) | 10.71 (272) | 13.15 (334) | 10.63 (270) | 12.99 (330) |

**Depth in (mm)**


**Screw Holes inches (mm)**

| Screw Hole c | 0.31 (8) | 0.31 (8) | 0.31 (8) | 0.31 (8) | 0.32 (8.2) | 0.32 (8.2) | 0.47 (12) | 0.47 (12) | 0.31 (8) | - | 0.47 (12) | - | - |
| Screw Hole d | 0.43 (11) | 0.43 (11) | 0.43 (11) | 0.43 (11) | 0.47 (12) | 0.47 (12) | 0.75 (19) | 0.75 (19) | 0.47 (12) | - | 0.75 (19) | 0.75 (19) | - | - |
| Screw Hole e | 0.22 (5.5) | 0.22 (5.5) | 0.22 (5.5) | 0.26 (6.5) | 0.26 (6.5) | 0.35 (9) | 0.35 (9) | 0.27 (6.8) | 0.33 (8.5) | 0.35 (9) | 0.33 (8.5) | 0.33 (8.5) | - | - |
| Screw Hole f | 0.35 (9) | 0.35 (9) | 0.35 (9) | 0.35 (9) | 0.24 (6) | 0.35 (9) | 0.35 (9) | 0.35 (9) | 0.31 (7.9) | 0.59 (15) | 0.39 (9.8) | 0.39 (9.8) | 0.67 (17) | 0.67 (17) |
| Max. Weight - lb (kg) | 11 (5) | 12 (5.5) | 15 (6.8) | 16 (7.3) | 22 (10) | 31 (14.1) | 51 (23.1) | 60 (27.2) | 27 (12.2) | 52 (23.6) | 100 (45.4) | 144 (65.3) | 78 (35.4) | 111 (50.4) |

* Depth of enclosure will vary with different options installed.
## DIMENSIONS

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<tr>
<td>A2</td>
<td>A3</td>
<td>A4</td>
<td>A5</td>
<td>B1</td>
<td>B2</td>
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<tr>
<td>IP20/21*</td>
<td>IP20/21*</td>
<td>IP55/66</td>
<td>IP55/66</td>
<td>IP21/55/66</td>
<td>IP21/55/66</td>
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<tr>
<td>OPEN/TYP1</td>
<td>OPEN/TYP1</td>
<td>TYPE 12/4X</td>
<td>TYPE 3R/12/4X</td>
<td>TYPE 1/3R/12/4X</td>
<td>TYPE 1/3R/12/4X</td>
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</table>

**Top and bottom mounting holes**

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<tbody>
<tr>
<td>B3</td>
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<td>C1</td>
<td>C2</td>
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<td>C4</td>
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<tr>
<td>IP20/21*</td>
<td>IP20/21*</td>
<td>IP21/55/3R/66</td>
<td>IP21/55/3R/66</td>
<td>IP20/21*</td>
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<tr>
<td>OPEN/TYP1</td>
<td>OPEN/TYP1</td>
<td>TYPE 1/3R/12/4X</td>
<td>TYPE 1/3R/12/4X</td>
<td>OPEN/TYP1</td>
<td>OPEN/TYP1</td>
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</table>

**Top and bottom mounting holes**

(B4 + C3 + C4 only)
DIMENSIONS

D1 ENCLOSURE, CABINET MOUNT - Dimensions in mm (in.)

D2 ENCLOSURE, CABINET MOUNT - Dimensions in mm (in.)
DIMENSIONS

EXTERIOR DIMENSIONS FOR D1H WITH NEMA 3R KIT (9K715) - Dimensions in mm (in.)
Please note airflow directions

EXTERIOR DIMENSIONS FOR D2H WITH NEMA 3R KIT (9K716) - Dimensions in mm (in.)
Please note airflow directions
DIMENSIONS

D3 ENCLOSURE, CABINET MOUNT - Dimensions in mm (in)

D4 ENCLOSURE, CABINET MOUNT - Dimensions in mm (in.)

IP00/IP21/IP54 – ALL SIZES
Please note airflow directions
DIMENSIONS

D5 ENCLOSURE - Dimensions in mm (in.)

D7 ENCLOSURE - Dimensions in mm (in.)