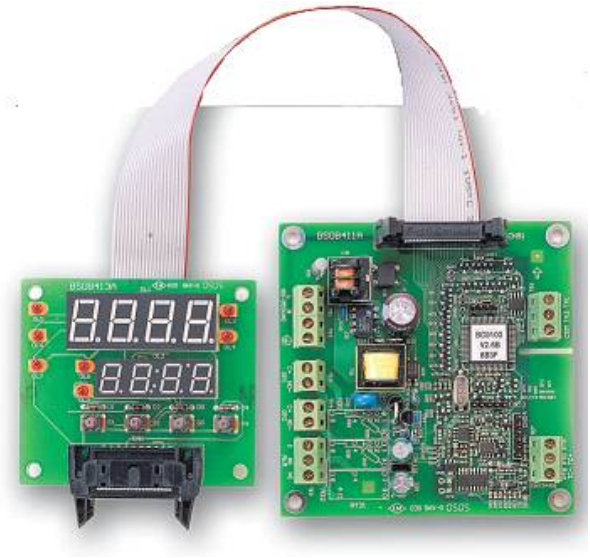
B41 Board Level PID Control

The B41 Board Level Control is designed for OEM applications where available panel and/or depth does not allow traditional DIN sized panel mount controls.

The B41 is based upon FDC's 100 Series technology providing up to two PID outputs, alarm and communications capability.

The B41 display board is the approximate size of a ¼ DIN cutout providing the same display features of the ¼ DIN 4100: Setpoint, process value, degrees C or F, manual mode, Auto Tune and output 1, 2 & alarm annunciation.



- **High Performance PID control at Low Cost**
- **Fuzzy modified PID Heat & Cool control**
- **Fast Scan Rate: 5 scans/second**
- **Universal Input: Thermocouple & RTD**
  - **High-accuracy 18 Bit A/D**
- **Up to two PID control outputs**
- **Alarm output: multiple configurations**
- **Lockout protection**
- **SEL function allows custom user menu**
- **Bumpless Auto/Manual & failure mode**
- **Soft-start setpoint ramp function**
- **Dwell timer**
- **Configuration Port standard**
- **RS232/485 Modbus port [optional]**
  - **Control Parameters may be addressed through Modbus eliminating need for control display board.**

B41 Specifications

Power: 90-250VAC, 47-63Hz, 10VA, 5W maximum
11-26 VAC/VDC 12VA, 5W maximum

Input [High Accuracy 18 Bit A/D Resolution]
Thermocouple: Type J, K, T, E, B, R, S, N, L
RTD: Pt 100 ohm RTD (DIN and JIS)
Linear: 4-20/0-20mA; 0-10VDC; 0-70mV

Sampling Rate: 5 times per second

Accuracy: Typically better than 0.25% of span

Cold Junction Compensation: 0.1° C/°C ambient typical

Sensor Break: Protection mode configurable

Common Mode Rejection Ratio: 120dB

Display
LED Process Display: 0.56"
LED Setpoint Display: 0.40"
Status Indicator LED: Out1, Out2, Alm, Man, AT, °C ,°F

Control Outputs: (see order Matrix)

Retransmission and Communications:
Digital Communications: Modbus RS232 or 485
Retransmission (15-Bit): Linear mA, mV or VDC

Control:
Proportional Band: 0.1 to500°C (0.1-900°F)
Reset [Integral]: 0 to 3600 seconds
Rate [Derivative]: 0 to 360.0 seconds
PID Fuzzy Auto Tune: Cold or Warm Start
Cycle Time: 0.1 to 90 seconds
Ramp Rate: 0 to 500°C (900°F)/minute or hour
Timer Dwell: 0 to 4553.6 minutes
Relay Hysteresis: Configurable 0.1 to 90.0°F
Control Action: Configurable Direct or Reverse
Control Outputs:

Environmental:
Operating Temperature: -10°C to 50°C
Storage Temperature: -40°C to 60°C
Humidity: 0 to 90% (non-condensing)
Insulation Resistance: 20 M ohms minimum @500VDC
Dielectric Strength: 2000 VAC. 50/60Hz for 1 minute
Vibration Resistance: 10-55Hz, 10 m/s for 2 hours
EMC: ENC61326

P.O. Box 1196 – Bridgeview, IL
888.751.5444 - 888.307.8014
888.342.5332 Technical Support
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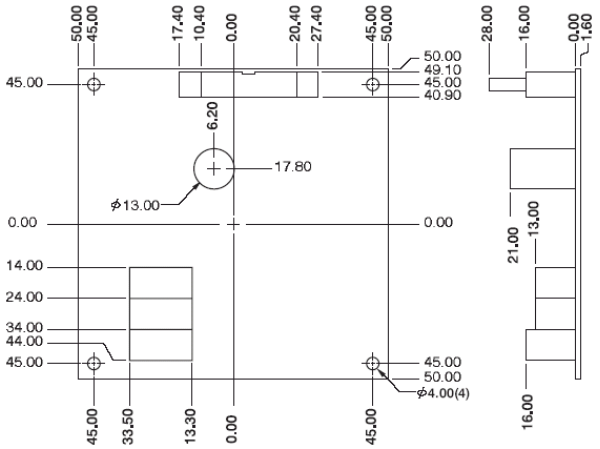
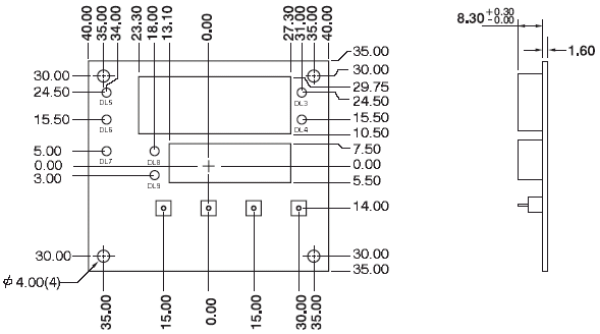
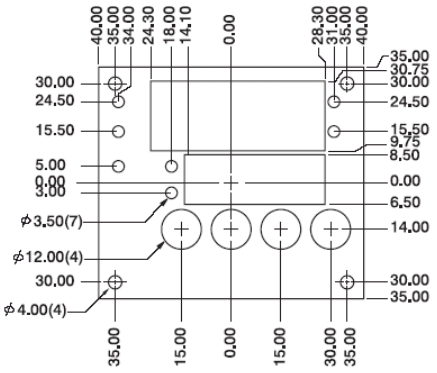
Dimension of Control Board



Dimension of Display Board



Dimension of Mounting plate for Display Board



Order Matrix:

B41 - □ - □ - □ - □ - □ - □ - □

1 2 3 4 5 6 7

1: Power Input:

4: 90-250VAC 50/60Hz
5: 11-26 VAC or VDC
9: Special Order

2: Signal Input:

1: Standard Input
Thermocouple: J, K, T, E, B, R, S, N, L
RTD: PT100 DIN and PT100 JIS
9: Special Order: linear mA & VDC available

3: Output 1

0: None
1: Relay 2A/240VAC resistive [spst]
2: SSR Drive 5V @ 30mA
3: 4-20/0-20mA linear, isolated max load 500 ohms
4: 1-5/0-5VDC linear isolated min impedance 10K ohms
5: 0-10VDC linear isolated min impedance10K ohms
6: Triac 1A/240VAC resistive
C: SSR Drive 14VDC @ 40mA
9: Special Order

4: Output 2

0: None
1: Relay 2A/240VAC resistive [spst]
2: SSR Drive 5V @ 30mA
3: 4-20/0-20mA linear, isolated, max load 500 ohms
4: 1-5/0-5VDC linear isolated, min impedance 10K ohms
5: 0-10VDC linear isolated, min impedance10K ohms
6: Triac 1A/240VAC resistive
7: 20VDC/25mA Isolated power supply
8: 12VDC/40mA Isolated power supply
9: 5VDC/80mA Isolated power supply
C: SSR Drive 14VDC @ 40mA
A: Special Order

5: Alarm

0: None
1: Form C Relay 2A/240VAC resistive [SPDT]
9: Special Order

6: Communications

0: None
1: RS-485 Modbus RTU
2: RS-232 Modus RTU
3: Retrans: 0-20/4-20mA isolated, max load 500 ohms
4: Retrans: 0-5/1-5VDC isolated, max impedance 10K O
5: Retrans: 0-10VDC isolated, max impedance 10K ohms
9: Special Order

7: Length of Flat Connecting Cable: Control to Display Board

0: No Display Board
3: Display Board with 300 mm connecting cable
9: Special Order

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