## Vintage



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## SERIES 16

## 1/16 DIN Universal Process Controller

- Thermocouple, RTD, Voltage or Current Input
- User-Selectable Ramp to Setpoint
- Bumpless Auto/Manual Transfer
- NEMA 4X (IP65) Dust and SplashProof Front Panel
- On/Off through Full PID Operation (P,PI,PD,PID)
- Auto-Tuning, Heat or Cool
- Adjustable Hysteresis \& Heat/Cool Spread
- Field-Configurable Process, Deviation, or Latching Alarms
- Remote Setpoint Select Option
- Dual Output/Dual Alarm Capabilities
- Optional RS232/RS485 Communications
- Optional Process Variable Retransmission



## Ordering Information

 SERIES 16 TEMPERATURE/ PROCESS CONTROLLER

## OPERATING LIMITS

| Temperature | $32^{\circ}$ to $131^{\circ} \mathrm{F}\left(0^{\circ}\right.$ to $\left.55^{\circ} \mathrm{C}\right)$ |
| :--- | :--- |
| Humidity | $90 \%$ R.H. maximum, non-condensing |
| Line Voltage | 100 to $250 \mathrm{~V} \mathrm{50/60} \mathrm{~Hz}$ |
|  | 125 to 300 Vdc |
|  | $24 \mathrm{Vac} / \mathrm{Vdc}$ (optional) |

Power
consumption Less than 6 VA (instrument)

## PERFORMANCE

| Accuracy | $\pm 0.2 \%$ of FS, $\pm$ one digit |
| :--- | :--- |
| Setpoint |  |
| Resolution | 1 count/0.1 count |
| Repeatability <br> Temperature | $\pm 1.0$ count |
| Stability | $5 \mathrm{mV} /{ }^{\circ} \mathrm{C}$ maximum |
| TC Cold |  |
| End Tracking | $0.05^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{C}$ ambient |
| Noise Rejection | Common mode $>100 \mathrm{~dB}$ <br>  <br> Series mode $>70 \mathrm{~dB}$ |
| Process Sampling | $10 \mathrm{~Hz}(100 \mathrm{~ms})$ |
| Linear Input: | L 1 to L7 (Refer to Ordering Codes) |
| Engineering Units | Scalable, -1999 to 9999 |
| Digital Filtering | $0.1,1.0$, or 10 sec |
| Decimal Position | Selectable, none, $1 / 10$, or $1 / 100$ |

## CONTROL CHARACTERISTICS

Setpoint Limits Limited to configured range of TC and RTD

| Alarms | Adjustable for high/low; selectable <br> process or deviation |
| :--- | :--- |
| Rate | 0 to 900 sec |
| Reset | 0 to 3600 sec |
| Cycle Time | 0.2 to 120 sec |
| Gain | 0 to 400 |
| Gain Ratio | 0 to 2.0 (in 0.1 increments) |
| Control Hysteresis | 1 to 100 (on/off configuration) |
| Spread (Output 2) | 0 to 100 (above setpoint) |
| Ramp to Setpoint | 1 to 100 minutes |
| Autotune | Operator-initiated from front panel |
| Manual Control | Operator-initiated from front panel |

## INPUTS

Thermocouple K, J,N,R,T,S, Platine ${ }^{\oplus}$ II
Maximum lead resistance, 100 ohms for rated accuracy
RTD
Platinum, 3 -wire, 100 ohms at $0^{\circ} \mathrm{C}$, DIN curve standard (0.00385) ; 1000 ohms
Linear

## OUTPUTS

\#1 reverse-acting (Heating)
\#2 direct-acting (Cooling)
B Relay 5 A @ 120 Vac, 3 A @ 240 Vac
F $\quad 4-20 \mathrm{~mA}, 500$ ohms max.
S 20 Vdc pulsed
T Solid-state relay, 1 A
Alarms Optically isolated triac, rated 1 A, 120/240 Vac @ $25^{\circ} \mathrm{C}$ DC - 20 mA sink or 24 V supply
MECHANICAL CHARACTERISTICS
Display
Dual, 4-digit, 9.2 mm, Process: orange Menu/parameter: green
Front Panel Rating NEMA 4X (IP65)
Connections Input and output via barrier strip, with locking terminals
Contacts Twin bifurcated, double-wipe

Specifications subject to change without notice.


## SERIES 18 and 19

## 1/8 DIN Universal Process Controller

- Thermocouple, RTD, Voltage or Current Input
- Switch-Selectable Inputs
- User-Selectable Ramp to Setpoint
- Auto-Tuning, Heat or Cool
- Dual Output/Dual Alarm Capabilities
- On/Off through Full PID Operation (P,PI,PD,PID)
- NEMA 4X (IP65) Dust and Splashproof Front Panel
- Bumpless Auto/Manual Transfer
- Adjustable Hysteresis \& Heat/Cool Spread
- Field-Configurable Process, Deviation, or Latching Alarms
- Optional RS232/RS485 Communications
- Optional Process Variable Retransmission
- Remote Setpoint Select, Non-Linear Inputs, or Other Special Options




## OPERATING LIMITS

Line Voltage
100 to $250 \mathrm{~V}, 50 / 60 \mathrm{~Hz}$ 125 to 300 Vdc
Power Consumption Less than 6 VA (instrument)
Temperature $\quad 32^{\circ}$ to $131^{\circ} \mathrm{F}\left(0^{\circ}\right.$ to $\left.55^{\circ} \mathrm{C}\right)$
Humidity
$90 \%$ R.H. maximum, non-condensing

## PERFORMANCE

Accuracy $\quad \pm 0.2 \%$ of FS, $\pm$ one digit
Setpoint Resolution 1 count/ 0.1 count
Repeatability $\pm 1.0$ count
Temperature Stability $\quad 5 \mathrm{mV} /{ }^{\circ} \mathrm{C}$ maximum
TC Cold End Tracking $\quad 0.05^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{C}$ ambient
Noise Rejection Common mode $>100 \mathrm{~dB}$
Series mode $>70 \mathrm{~dB}$
Process Sampling 10 Hz ( 100 ms )
Linear Input: L1 to L7 (Refer to Ordering Codes)
Engineering Units Scalable, - 1999 to 9999
Digital Filtering $0.1,1.0$, or 10 sec
Decimal Position Selectable, none or ( 0.00 ), ( 0,0 )

## CONTROL CHARACTERISTICS

Setpoint Limits Limited to configured range of TC and RTD
Alarms Adjustable for high/low; selectable process or deviation
Rate 0 to 900 sec
Reset 0 to 3600 sec
Cycle Time 0.2 to 120 sec
Gain 0 to 400
Gain Ratio $\quad 0$ to 2.0 (in 0.1 increments)
Control Hysteresis 1 to 100 (on/off configuration)
Spread (Output 2) 0 to 100 (above setpoint)
Ramp to Setpoint 1 to 100 minutes
Autotune
Manual Control
Operator-initiated from front panel Operator-initiated from front panel

## INPUTS

Thermocouple
E, K, J,N,R,T,S, Platine ${ }^{\text {® }}$ II
Maximum lead resistance, 100 ohms for
rated accuracy
RTD

Linear Current and voltage (refer to ordering code)

## OUTPUTS

\#1 reverse-acting (heating)
\#2 direct-acting (cooling)

| F | $4-20 \mathrm{~mA}, 500$ ohms max. |
| :--- | :--- |
| S | 20 Vdc pulsed |
| T | Solid-state relay, 1 A |
| Alarms | Optically isolated triac, rated 1 A, |
|  | $120 / 240 \mathrm{Vac}$ @ $25^{\circ} \mathrm{C} \mathrm{DC}-20 \mathrm{~mA}$ sink or |
|  | 24 V supply (switch AC only) or $3 \mathrm{~A} / 5 \mathrm{~A}$, |
|  | $120 / 240$ Vac (switch AC or DC) |

## MECHANICAL CHARACTERISTICS

Display
Dual, 4-digit, 9.2 mm
Process: orange
Menu/parameter: green
Front Panel Rating
NEMA 4X (IP65)
Connections
Input and output via barrier strip, with locking terminals
Contacts
Twin bifurcated, double-wipe

Specifications subject to change without notice.


Output 1
LED indication of Heat cycle (Output 1 action)
Output 2
LED indication
of Cool cycle
(Output 2 action)
Alarm 1
LED indication of Alarm1 condition
Alarm 2
LED indication of Alarm 2 condition

## Function 1

LED indication of Special Function 1
Function 2
LED indication of Special Function 2


Process Value
Displays measure process temperatı in ${ }^{\circ} \mathrm{F}$ or ${ }^{\circ} \mathrm{C}$ or proce value in engineeril units
Setpoint Value
Displays programr setpoint temperatı in ${ }^{\circ} \mathrm{F}$ or ${ }^{\circ} \mathrm{C}$ or setpi value in engineerii units


Mode Key Used to ac Standby, Tune, Run or Manual modes.

Lower Key Used to scroll down througl available parameter settings, decrease values or change menu levels (Hold fol fast-step progression)
Raise Key Used to scroll up through available parameter settings, increase values or change menu levels (Hold for fast-step progression)


Parameter/Access Key Used to index through parame or to access Menu Levels

## SERIES 25

## 1/4 DIN Universal Process Controller

- Thermocouple, RTD, Voltage or Current Input
- User-Selectable Ramp to Setpoint
- Bumpless Auto/Manual Transfer
- NEMA 4X (IP65) Dust and SplashProof Front Panel
- On/Off through Full PID Operation (P,PI,PD,PID)
- Auto-Tuning, Heat or Cool
- Adjustable Hysteresis \& Heat/Cool Spread
- Field-Configurable Process, Deviation, or Latching Alarms
- Remote Setpoint Select Option
- Dual Output/Dual Alarm Capabilities
- Optional RS232/RS485 Communications
- Optional Process Variable Retrans mission


Ordering Information


## SERIES 25 TEMPERATURE/PROCESS CONTROLLER

OPERATING LIMITS
$\begin{array}{ll}\text { Line Voltage } & 100 \text { to } 250 \mathrm{~V} 50 / 60 \mathrm{~Hz} \\ & 125 \text { to } 300 \mathrm{Vdc}\end{array}$
Power
Consumption
Temperature
Humidity
Less than 6 VA (instrument)
$32^{\circ}$ to $131^{\circ} \mathrm{F}\left(0^{\circ}\right.$ to $55^{\circ} \mathrm{C}$ )
90\% R.H. maximum, non-condensing

PERFORMANCE

| Accuracy | $\pm 0.2 \%$ of FS, $\pm$ one digit |
| :---: | :---: |
| Setpoint |  |
| Resolution | 1 count/0.1 count |
| Repeatability | $\pm 1.0$ count |
| Temperature |  |
| Stability | $5 \mathrm{mV} /{ }^{\circ} \mathrm{C}$ maximum |
| TC Cold End |  |
| Tracking | $0.05^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{C}$ ambient |
| Noise Rejection | Common mode > 100 dB |
|  | Series mode > 70 dB |
| Process Sampling | 10 Hz (100 ms) |
| Linear Input: | L1 to L7 (Refer to Ordering Codes) |
| Engineering Units | Scalable, -1999 to 9999 |
| Digital Filtering | $0.1,1.0$, or 10 sec |
| Decimal Position | Selectable, none, 1/10, or 1/100 |

## CONTROL CHARACTERISTICS

| Setpoint Limits | Limited to configured range of TC <br> and RTD |
| :--- | :--- |
| Alarms | Adjustable for high/low; selectable <br> process <br> or deviation |
| Rate | 0 to 900 sec |
| Reset | 0 to 3600 sec |
| Cycle Time | 0.2 to 120 sec |
| Gain | 0 to 400 |
| Gain Ratio | 0 to 2.0 (in 0.1 increments) |
| Control Hysteresis | 1 to 100 (on/off configuration) |
| Spread (Output 2) | 0 to 100 (above setpoint) |
| Ramp to Setpoint | 1 to 100 minutes |
| Autotune | Operator-initiated from front panel |
| Manual Control | Operator-initiated from front panel |

INPUTS
Thermocouple
E, K, J,N,R,T,S, Platine ${ }^{\oplus}$ II
Maximum lead resistance, 100 ohms for rated accuracy
RTD
Platinum, 3 -wire, 100 ohms at $0^{\circ} \mathrm{C}$, DIN curve standard (0.00385); 1000 ohms
Linear

## OUTPUT OPTIONS

\#1 reverse-acting (heating)
\#2 direct-acting (cooling)

| B | Relay 5 A @ 120 Vac, 3 A @ 240 Vac |
| :---: | :---: |
| F | 4-20 mA, 500 ohms max. |
| S | 20 Vdc pulsed |
| T | Solid-state relay, 1 A |
| Alarms | Optically isolated triac, rated 1 A , 120/240 Vac <br> @ $25^{\circ} \mathrm{C}$ DC - 20 mA sink or 24 V supply (switch AC only) or "B" 5 A @ 120 Vac, 3 A @ 240 Vac (switch AC or DC) |

MECHANICAL CHARACTERISTICS

| Display | Dual, 4-digit,Process: orange, $0.55{ }^{\prime \prime}$ <br> $(14 \mathrm{~mm})$ Menu/parameter: green, <br> $0.36 "(9.2 \mathrm{~mm})$ |
| :--- | :--- |
| Front Panel <br> Rating | NEMA 4X (IP65) |
| Connections | Input and output via barrier strip, with <br> locking terminals |
| Contacts | Twin bifurcated, double-wipe |

Specifications subject to change without notice.


Output 1


## 1/4 DIN Digital Temperature Controller

- Large, Easy-to-Read LED Display, Selectable for Either Setpoint or Process Temperature
- Accepts Type J (OTC25-N \&L) or Type J and K (OTC25-P) Thermocouple Input
- Adjustable Output Hysteresis to Prevent Rapid Cycling Around Setpoint Temperature
- Adjustable Deviation Alarm Flashes When Measured Temperature Exceeds or Falls Below Setpoint Temperature
- NEMA 4X (IP65) Front Bezel, Splash-Proof and Resistant to Dust
- Discrete Status Indicators Illuminate When Temperature Display, Setpoint Display, Limit Display, or Heat/Cool Output Is Active



## Ordering Information



[^0]Panel Cutout: 3.622" sq. (92 mm)


Three-Digit LED Display Displays measured temperature, setpoint, or parameter labels and settings.

Front Panel Controls and Indicators

## Parameter Key

Used to access available parameters to set or change values.

## A Raise Key

Used to scroll up through available parameter settings or to increase values. (Hold for fast-step progression)

## Lower Key

Used to scroll down through available parameter settings or to decrease values. (Hold for fast-step progression)
Discrete LED Indicators

| OTC25 N |  | OTC25 L |  |
| :--- | :--- | :--- | :--- |
|  |  | OTC25 P |  |
| Actual: amber | Actual: amber |  | Actual: amber |
| Setpoint: amber | Setpoint: amber <br> Heat: orange | Setpoint: amber <br> Limit: orange | Output 1: orange <br> Output 2: orange |

## SERIES 6075 and 6080

## 1/4 DIN Temperature and Process Controllers

- PID Control
- Auto-Tune Heat or Heat/Cool (6075/6080)
- Optional Field-Installable Computer Interface
- Thermocouple or RTD Inputs (6075/6080)
- Eight Ramp/Soak Segments, Repeatable to 254 Cycles or Infinite (6080)
- Guaranteed Soak Band (6080)
- Plug-In Outputs
- Two Optional Alarms



## Ordering Information



[^1][^2]| Line Voltage: | $120 / 240 \mathrm{Vac} \pm 10 \%$ to $\pm 15 \%, 50-60 \mathrm{~Hz}$ |
| :---: | :---: |
| Power |  |
| Consumption: | Less than 6VA (instrument) |
| Sensor Break |  |
| Protection: | Upscale standard (6075, 6080) |
| Ramp/Soak Segments |  |
| (Series 6080): | Eight ramp or soak segments, plus a starting setpoint temperature |
| Key Functions |  |
| (Series 6080): |  |
| Standby/Reset | Puts controller in idle at beginning of profile |
| R/S/Control | Selects Ramp/Soak or controller mode |
| Tune/Setup | Starts auto tuning or accesses Ramp/Soak setup |
| Setpoint | Returns controller to setpoint from index mode Press twice to exit Ramp/Soak setup |
| Run/Hold | Start/Pause key for Ramp/Soak routine |
| Temperature |  |
| Stability: | $5 \mathrm{~V} /{ }^{\circ} \mathrm{C}$ maximum, $3 \mathrm{~V} /{ }^{\circ} \mathrm{C}$ typical (6075, 6080) |
| T/C Cold End |  |
| Tracking: | $0.05{ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{C}$ ambient |
| Noise Rejection: | Common mode 80 dB . Serial mode 120 dB. |
| Dual Display: | Process temperature or parameter code is shown on upper display; setpoint or parameter value can be selected on lower display |
| Update Rate: | Process display updated 2.5 times per second; digitally filtered to eliminate noise fluctuation |
| Filtered LED |  |
| Display: | 4 digits for process, 4 digits for parameters ( 9.2 mm ) |
| Communications: |  |
| Digital Format: | Isolated 7-bit ASCII, asynchronous with 1 start and 1 stop bit, odd parity, selectable baud (300, 600, 1200, 2400) |
| Electrical: | RS232, RS485, on plug-in cards. |
| Mechanical: | 9 pin "D" connector, DB-9 Type on rear of unit |
| Accuracy: | $\pm 0.2 \%$ of full scale, $\pm$ one digit |
| Operating |  |
| Ambient for |  |
| Rated Accuracy: | $32^{\circ}$ to $131^{\circ} \mathrm{F}\left(0^{\circ}\right.$ to $\left.55^{\circ} \mathrm{C}\right)$ |
| F/C: | Front Panel selectable, setpoint and alarms affected $(6075,6080)$ |

Alarms:

Outputs, Primary
Setpoint:
"B" Relay
(time
proportional)

## "F"

Current proportional "S"

Pulsed voltage
" $T$ " Triac (time proportional)

Connections:

Dimensions: $\quad$ Front panel: 3.780 sq. in. ( $96 \mathrm{~mm}^{2}$ )
Case:

Mounting:
1 and 2 auxiliary on/off, adjustable for high or low triggering; LED on front panel displays alarm status; process/deviation mode selectable; optically isolated solid-state relays, rated 1 A at 120/240 Vac (on/off)

Available heating only, cooling only or heat/cool, (Series 6075 \& 6080)

SPST relay, 7 A resistive at $120 \mathrm{Vac}, 5 \mathrm{~A}$ resistive at $240 \mathrm{Vac}, 50 \mathrm{VA}$ inductive 4-20 mAdc into 500 ohm maximum

20 Vdc pulsed time proportional signal for driving
solid-state relays

Solid state, plug-in relay output, zero voltage switched; 1 A holding and 10 A inrush, SPST
Inputs and outputs via barrier strips with UL-listed locking terminals; communication via 9 pin sub-miniature " $D$ " connector
5.656 " ( 143.3 mm ). Depth behind panel: 4.78 " ( 121.4 mm ). Panel cut-out: 3.622 sq . in. ( $92 \mathrm{~mm}^{2}$ )
Channel slides and screws

NOTES

NOTES

Universal Digital Controllers


Custom Control Solutions


Hot Runner Controllers


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[^0]:    ${ }^{1} \mathrm{On} / \mathrm{Off}$ and limit control versions (OTC25-N and OTC25-L) are only available with Type J thermocouple input.
    ${ }^{2}$ Limit control versions (OTC25-L) may only be ordered with electromechanical relay (Type "B") outputs in Output 1.

[^1]:    †RTD units include a $1 \mathrm{mV} /{ }^{\circ} \mathrm{C}$ recorder output.
    $0=$ low end of range.
    *Unit does not Auto-tune on this range.

[^2]:    ** CAUTION NOTE: "B" output modules should not be used to energize relays, contactors, solenoids, or other inductive loads. Use for resistive loads only. " T " module is recommended for this purpose.

