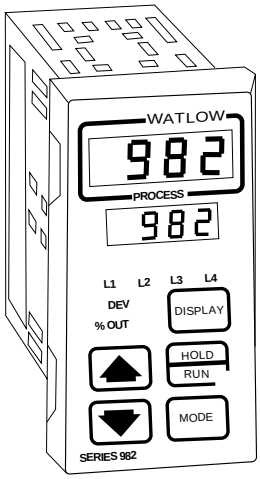
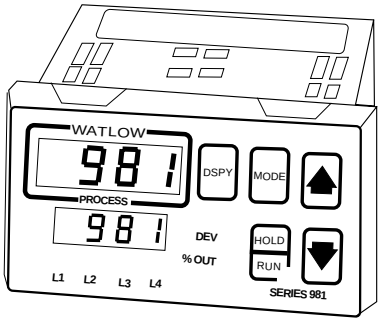
Easy Operation and Numerous Uses Are Constants For This 1/8 DIN Ramping Controller





The Watlow Series 982 vertical ⅛ DIN ramping control and its companion, the horizontal Series 981, offer four-file / 24-step program capability, or easy-to-use non-ramping set point operation. The control is designed with most typical programming needs in mind. The Series 981/982 is among the most easy-to-use ramping controls.

Ramping operations include four files with six steps in each file. Programming options include ramp-rate or time-based profiles, guaranteed soak deviation, program looping and program status selection after power outage. The files may be linked to create a single 24-step program.

The primary analog input accepts 11 different thermocouple types, RTD or scalable process inputs. A second analog input can be factory configured for a slidewire feedback input common in gas valve control. With up to two event inputs, the Series 981/982 offers remote program start or hold capability and allows the operator to program a wait-for event.

The Series 981/982 is packaged with a NEMA 4X front panel to withstand harsh environments, four inch case depth and touch-safe wiring terminal.

The Series 981/982 features a three-year warranty and four day shipment, on all model, in limited quantities.

Features:

- Four files / 24 steps
- Auto-tuning
- Optional dual auxiliary outputs
- Optional retransmit of set point or process variable
- Hardware and software parameter lockout options
- NEMA 4X front panel
- 10Hz sampling rate and burst-fire control
- Slidewire feedback

Benefits:

- Designed to meet the needs of most ramping applications
- One-step tuning of system parameters for easy operation
- Flexible time-based events or alarm outputs
- For master programmer or chart recorder connection
- Provides several levels of operator security
- Provides watertight corrosion resistance
- Smooth, accurate control of the process
- Interfaces with most slidewire input positioning devices

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ISO 9001
Registered Company
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Specifications—W982-XSPN Rev (1079)

Control Mode
- Single input, quad output, optional retransmit of set point or process variable.
- Programmable direct- and reverse-acting control outputs.
- 4-file, 6 steps per file, time/temperature profile or fixed-set-point control.
- Ramp-rate or time-based programming.
- Selectable control status following power loss.

Operator Interface
- Dual, four digit LED displays. Upper: 0.4 inch (10 mm). Lower: 0.3 inch (8 mm).
- MODE, HOLD/RUN, DISPLAY, UP and DOWN keys.

Sensors/Inputs
- Contact input for software function select (event input).
- Thermocouple Types B, C②, D②, E, J, K, N, R, S, T and Pt 2②.
- RTD resolution in 1° or 0.1° RTD scales.
- Process variables: 0-20mA, 4-20mA, 0-5V⎓(dc), 1-5V⎓(dc), and 0-10V⎓(dc).
- Slidewire or digital event input options.
- Sensor break protection de-energizes system for safety. Latching or non-latching.

Line Voltage/Power
- 100-240V≂(ac/dc) +10%, -15%; 50/60Hz, ±5%.
- 24 to 28V≂(ac/dc) +10%, -15%; 50/60Hz, ±5%.
- Fused internally (factory replaceable only) Slo-Blo® type (time-lag): 2A, 250V for high voltage versions; 5A, 250V for low voltage versions.
- Power consumption 16VA maximum.
- Non-volatile memory retains data if power fails.

Operating Environment
- 32 to 130°F (0 to 55°C); 0 to 90% RH, non-condensing.

Agency Approvals
- CE approved
  89/336/EEC Electromagnetic Compatibility Directive.
  EN 50081-2: 1994 Emissions.
  EN 50082-2: 1994 Immunity.
  73/23/EEC Low Voltage Directive.
  EN 61010-1: 1993 Safety.
- NEMA 4X
- UL® 873 and C-UL File #E43684

Mechanical
- ⅛ DIN panel mount, NEMA 4X (IP65 equivalent) front panel.
- Overall width x height x depth
  Horizontal; 4.03" x 2.18" x 4.74", (55 mm x 102 mm x 120 mm).
  Vertical; 2.18" x 4.03" x 4.74", (55 mm x 102 mm x 120 mm).
- Depth behind panel; 4.06" (103 mm).
- Weight less than or equal to 14.0 oz. (0.40kg).

Range Information

Thermocouple

(Available with basic or universal signal conditioner)

Type C②	32	to	4200°F	(0	to	2316°C)
Type D②	32	to	4200°F	(0	to	2316°C)
Type E	-328	to	1470°F	(-200	to	799°C)
Type J	32	to	1500°F	(0	to	816°C)
Type K	-328	to	2500°F	(-200	to	1371°C)
Type N	32	to	2372°F	(0	to	1300°C)
Type T	-328	to	750°F	(-200	to	399°C)
Pt 2②	32	to	2543°F	(0	to	1395°C)

(Available with universal signal conditioner)

Type B	1598	to	3300°F	(870	to	1816°C)
Type R	32	to	3200°F	(0	to	1760°C)
Type S	32	to	3200°F	(0	to	1760°C)

RTD Resolution (DIN or JIS)

1° (DIN)	-328	to	1472°F	(-200	to	800°C)
1° (JIS)	-328	to	1166°F	(-200	to	630°C)
0.1° (DIN and JIS)							
	-99.9	to	999.9°F	(-73.3	to	537.7°C)

Process

0-5V⎓(dc); 1-5V⎓(dc); 0-10V⎓(dc); 0-20mA; and 4-20mA.
-999 to 9999 units.
Input 2 slidewire feedback
100 to 1200Ω.

① Electromechanical relays warranted for 100,000 closures only. Solid-state switching devices recommended for applications requiring fast cycle times or extended service life.

② Not an ANSI symbol.

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Ordering Information—W982-XMNN Rev (1080)

To order, complete the code number with the information below:

Series 981/982 — **98 C - - -**
Single chanel ⅛ DIN ramping control, vertical or horizontal mount

Power Supply & Mounting
1 = 100 to 240V≂(ac/dc) nominal, horizontal mounting
2 = 100 to 240V≂(ac/dc) nominal, vertical mounting
3 = 24 to 28V≂(ac/dc) nominal, horizontal mounting
4 = 24 to 28V≂(ac/dc) nominal, vertical mounting

Software
C = Standard (4-file, 6 step per file, program capability)

Input 1
1 = Basic thermocouple signal conditioner (excluding Type B, R, and S)
2 = Universal signal conditioner (see range information)

Input 2
0 = None
3 = Slidewire feedback (see range information)
5 = Second digital event (one digital event is standard on all units)

Output 1
B = Solid-state relay, Form A, 0.5A, with RC suppression
C = Switched ⎓(dc) or open collector, isolated
D = Electromechanical relay①, Form C, 5A with RC suppression
E = Electromechanical relay①, Form C, 5A without RC suppression
F = Universal process, 0-5V⎓(dc), 1-5V⎓(dc), 0-10V⎓(dc), 0-20mA, 4-20mA, isolated
K = Solid-state relay, Form A, 0.5A, without RC suppression

Output 2
A = None
B = Solid-state relay, Form A, 0.5A, with RC suppression
C = Switched ⎓dc or open collector, isolated
D = Electromechanical relay①, Form C, 5A with RC suppression
E = Electromechanical relay①, Form C, 5A without RC suppression
F = Universal process 0-5V⎓(dc), 1-5V⎓(dc), 0-10V⎓(dc), 0-20mA, 4-20mA, isolated
K = Solid-state relay, Form A, 0.5A, without RC suppression
T = External signal conditioner power supply, 5, 12 or 20V⎓(dc) @ 30mA

Output 3
A = None
B = Solid-state relay, Form A, 0.5A, with RC suppression
C = Switched ⎓dc, isolated
J = Electromechanical relay①, Form A or B, 5A without RC suppression
K = Solid-state relay, Form A, 0.5A, without RC suppression
M = Retransmit, 0-20mA⎓(dc), 4-20mA⎓(dc)
N = Retransmit, 0-5V⎓(dc), 1-5V⎓(dc), 0-10V⎓(dc)
T = External signal conditioner power supply, 5, 12 or 20V⎓(dc) @ 30mA

Output 4
A = None
B = Solid-state relay, Form A, 0.5A, with RC suppression
C = Switched ⎓dc or open collector, isolated
D = Electromechanical relay①, Form C, 5A with RC suppression
E = Electromechanical relay①, Form C, 5A without RC suppression
K = Solid-state relay, Form A, 0.5A, without RC suppression
R = EIA/TIA-232 communications, opto-isolated
U = EIA/TIA-232, EIA/TIA-485 communications, opto-isolated
S = EIA/TIA-485, EIA/TIA-422 communications, opto-isolated
T = External signal conditioner power supply, 5, 12 or 20V⎓(dc) @ 30mA

Display Color (Upper/Lower)
GG = Green/Green RG = Red/Green
GR = Green/Red RR = Red/Red