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Performance Specifications

General Input

Analog to Digital Converter (ADC)
16-bit Σ–Δ A/D converter.

Resolution
±0.005% of span or 0.1°C.

Ambient Temperature Effect
Better than ±0.005% of input span per °C or ±1µV, whichever is greater.

Noise Rejection
Normal Mode: Better than 40dB @ 60Hz.
Common Mode: Better than 130dB @ 60Hz.

Input Response Time (for input step change)
Less than 200mS typical to 98% of final output value.

Input Overvoltage Protection
Bipolar Transient Voltage Suppressors (TVS).

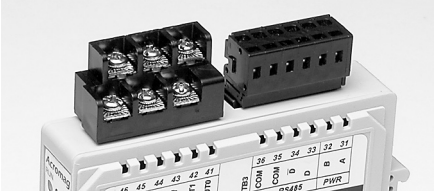
Thermocouple Input

Thermocouple Input Ranges
Thermocouple type user configured. Signal linearization, cold-junction compensation, and open circuit or lead break detection are included.

TC	°C Range (°F Range)	Accuracy
J	-210 to 760°C (-346 to 1400°F)	±0.5°C
K	-200 to 1372°C (-328 to 2502°F)	±0.5°C
T	-260 to 400°C (-436 to 752°F)	±0.5°C
R	-50 to 1768°C (-58 to 3214°F)	±1.0°C
S	-50 to 1768°C (-58 to 3214°F)	±1.0°C
E	-200 to 1000°C (-328 to 1832°F)	±0.5°C
B	260 to 1820°C (500 to 3308°F)	±1.0°C
N	-230 to 1300°C (-382 to 2372°F)	±1.0°C

Thermocouple Break Detection

TC sensor failure can be configured for either upscale or downscale.



Optional terminal blocks: barrier strip (left) and spring clamp (right). Cage clamp terminal is standard.

RTD Input

RTD Input Ranges
100 ohm Platinum, 120 ohm Nickel, or 10 ohm Copper; user-configured.

RTD	°C Range (°F Range)	Accuracy
Pt[1]	-200 to 850°C (-328 to 1562°F)	±0.25°C
Pt[2]	-200 to 850°C (-328 to 1562°F)	±0.25°C
Ni	-80 to 320°C (-112 to 608°F)	±0.25°C
Cu	-200 to 260°C (-328 to 500°F)	±1.00°C

Alpha: Pt1 (a = 1.3850), Pt2 (a = 1.3911), Ni (a = 1.6720), Cu (a = 1.4272).

2, 3, or 4-wire configurations supported. Module provides sensor excitation, linearization, lead-wire compensation, and sensor break detection.

RTD Excitation Current
1mA DC typical, all types.

RTD Lead-Wire Compensation
25 ohms per lead.

RTD Break Detection
RTD sensor failure can be configured for either upscale or downscale.

Millivolt Input

DC Millivolt/Voltage Input Ranges

±1.0V	±125mV	±31.25mV
±500mV	±62.5mV	±15.625mV
±250mV		

Millivolt Accuracy
Better than ±0.05% of input span.

Resistance Input

Resistance Input Range
0 to 500 ohms.

Resistance Accuracy
±0.05 ohms.

Output (DC V/mA)

D/A Converter
16-bit Σ–Δ.

Current Output
Ranges: 0-1mA, 0-20mA, 4-20mA.
Compliance: 10V minimum (500 ohm load).
Accuracy: 0.025% of span.

Voltage Output
Ranges: 0-5V, 0-10V.
Compliance: 10mA maximum with short circuit protection. 1 ohm output impedance.
Accuracy: 0.025% of span.

Accuracy (overall input to output)
0.075% of span.

Output (Relay)

Relay
One SPDT electro-mechanical relay.

Relay Ratings (CSA ratings)
25V DC @ 5A.
120/240V AC @ 5A.

Relay Time Delay
Adjustable alarm delay of up to 25 seconds.

Contact Material
Silver-cadmium oxide (AgCdO).

Expected Mechanical Life
20 million operations.

Environmental

Ambient Temperature
Operating: -25 to 70°C (-13 to 158°F).
Storage: -40 to 85°C (-40 to 185°F).

Relative Humidity
5 to 95%.

Power Requirements
10 to 36V DC. 75mA @ 24V. 120mA @ 15V.

Isolation (optical)
4-way (input/output/relay/power).
1500V AC for 60 seconds or 250V AC continuous.

Radiated Field Immunity (RFI)
EN61000-4-3, EN50082-1.

Electromagnetic Field Immunity (EMI)
Less than ±0.25% of output span effect under the influence of electromagnetic fields from switching solenoids, commutator motors, and drill motors.

Electrical Fast Transient (EFT)
EN61000-4-4, EN50082-1.

Surge Withstanding Capability (SWC)
EN61000-4-5, EN50082-1.

Electrostatic Discharge (ESD)
EN61000-4-2, EN50082-1.

Radiated Emissions
EN50081-1 for Class B equipment.

Approvals
UL listed (USA, Canada).
UL3121 - general product safety.

IntelliPack®: 800T Series

Configuration

Software Configuration
Units are fully programmable via the Windows XP/Vista/7 IntelliPack Configuration Program. Configuration downloads from PC through EIA232 serial port using Acromag 800C-SIP kit.

Field Configuration
Output, zero/full-scale, relay setpoint and deadband are configurable via push-buttons and a standard calibrator.

LED Indicators
LEDs indicate power, status, calibration, and alarm.

Physical

Enclosure
Case: Self-extinguishing NYLON type 6.6 polyamide thermoplastic UL94 V-2 NEMA Type 1 enclosure.

Connectors (Removable Terminal Blocks)
Wire Range: AWG #14-22 (AWG #12 stranded only).

Printed Circuit Boards
Military grade FR-4 epoxy glass circuit board.

Dimensions
1.05W x 4.68H x 4.35D inches.
26.7W x 118.9H x 110.5D millimeters.

Shipping Weight
1 pound (0.45 Kg) packed.

Ordering Information

IMPORTANT: All IntelliPacks require initial software configuration (order 800C-SIP). See Note 1 below.

801T-0500
IntelliPack transmitter (TC/RTD/mV/resistance input).

801T-1500
Same as above, plus an SPDT relay output.

800C-SIP
Software Interface Package.
Only one kit is required for all IntelliPack models.
See diagram on Page 83 for included parts.

4001-095
USB-to-Serial adapter

PS5R-VD24
Power supply (24V DC, 2.1A).

TBK-B01
Optional terminal block kit, barrier strip style, 2 pcs. (Does not include terminal block for input wiring.)

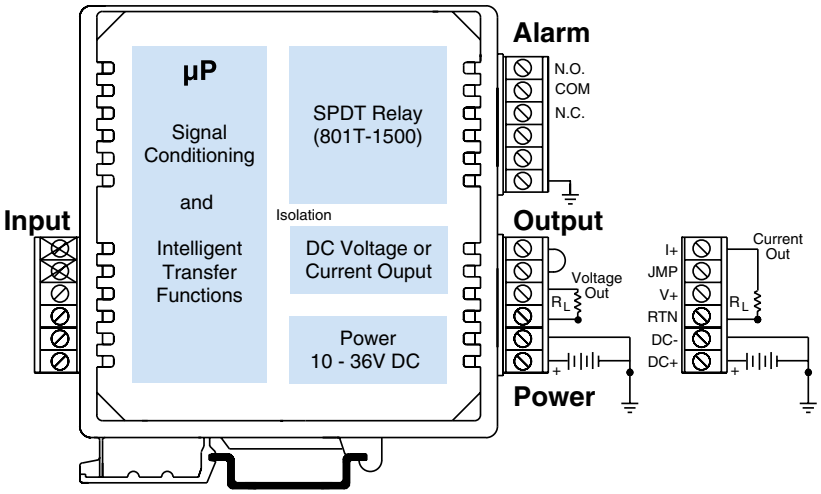
TBK-S01
Optional terminal block kit, spring clamp style, 2 pcs. (Does not include terminal block for input wiring.)

NOTE 1: To order factory configuration, call Acromag for a configuration form which must accompany your order. Also, append "-C" to model number (example: 801T-1500-C). 800C-SIP kit is still recommended.

IntelliPack®: 800T Series

IntelliPack 801T Temperature Transmitters





Thermocouple, RTD, milliVolt, and Resistance Input ◆ Limit Alarm

801T Transmitters

Thermocouple, RTD, milliVolt, and Resistance Input

Models
801T-0500: Universal temperature transmitter
801T-1500: Transmitter with limit alarm

Input Ranges
TC types: J, K, T, R, S, E, B, N
Millivolt: ±15.625mV to ±1.0V DC
RTD: 100 ohm Pt, 120 ohm Ni, 10 ohm Cu
Resistance: 0 to 500 ohms

Output Ranges
0 to 1mA, 0 to 20mA, 4 to 20mA DC
0 to 5V, 0 to 10V DC

Limit Alarm
SPDT electro-mechanical relay (-1500 unit only)

Power Requirement
10 to 36V DC

Approvals
UL, cUL listed.

Description

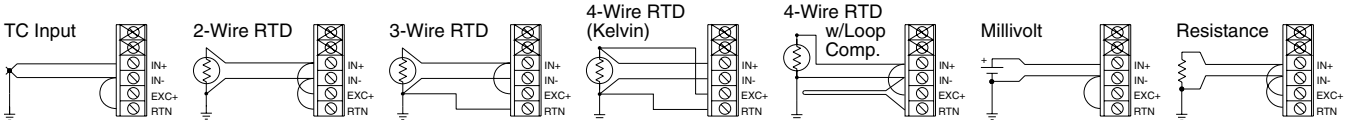
These transmitters isolate and convert sensor inputs to noise-free, proportional DC current or voltage output signals. An optional relay output adds a local limit alarm function.

Each unit offers a selection of input and output ranges, as well as several signal conditioning options. This flexibility enables a single IntelliPack to handle a broad range of applications. As your needs change, you can easily reconfigure the unit for different ranges or functions.

Setup is very easy. IntelliPack modules are quickly configured with the user-friendly Windows software program. Field adjustments are simple with the module's front-panel push-buttons and status LEDs. Once configured, IntelliPacks operate independent of any host computer.

Key Features & Benefits

- High-resolution Sigma-Delta A/D converter delivers high accuracy with low noise.
- Advanced microcontroller provides intelligent signal processing power for linearization, averaging, and square root computations.
- Windows XP/Vista/7 software configuration speeds setup and replacement.
- Multi-purpose inputs and outputs reduce spare stock requirements.
- Relay output option provides local limit alarm capability.

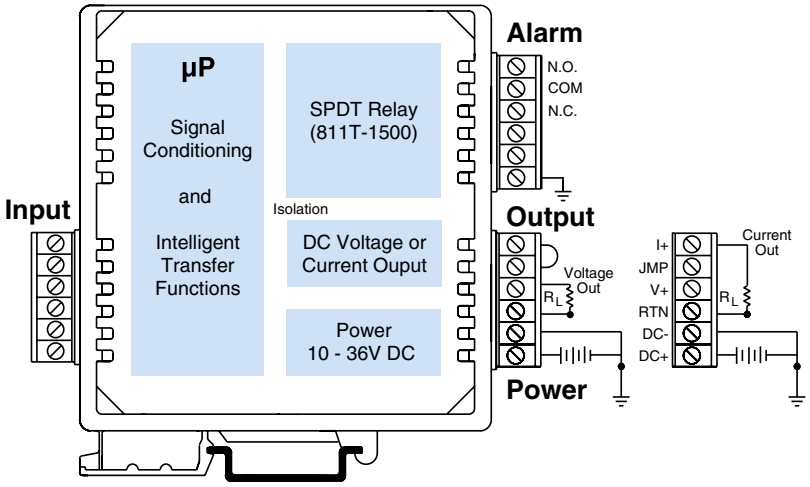


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IntelliPack®: 800T Series

IntelliPack 811T Universal DC Transmitters





DC Current, DC Voltage, AC Current Input ◆ Limit Alarm

811T Transmitters

DC Current, DC Voltage, and AC Current Input

Models
811T-0500: Universal DC input transmitter
811T-1500: Transmitter with limit alarm

Input Ranges
DC Current: 0 to 22mA
DC Voltage: ±100V DC
AC Current: 0 to 20A AC (with external sensor)

Output Ranges
0 to 1mA, 0 to 20mA, 4 to 20mA DC
0 to 5V, 0 to 10V DC

Limit Alarm
SPDT electro-mechanical relay (-1500 unit only)

Power Requirement
10 to 36V DC

Approvals
UL, cUL listed.

Description

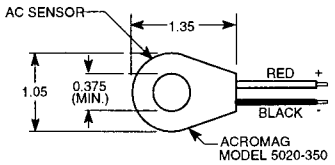
These transmitters isolate and convert sensor inputs to noise-free, proportional DC current or voltage output signals. An optional relay output adds a local limit alarm function.

Each unit offers a selection of input and output ranges, as well as several signal conditioning options. This flexibility enables a single IntelliPack to handle a broad range of applications. As your needs change, you can easily reconfigure the unit for different ranges or functions.

Setup is very easy. IntelliPack modules are quickly configured with the user-friendly Windows software program. Field adjustments are simple with the module's front-panel push-buttons and status LEDs. Once configured, IntelliPacks operate independent of any host computer.

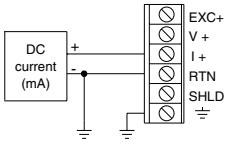
Key Features & Benefits

- High-resolution Sigma-Delta A/D converter delivers high accuracy with low noise.
- Advanced microcontroller provides intelligent signal processing power for linearization, averaging, and square root computations.
- Windows XP/Vista/7 software configuration speeds setup and replacement.
- Multi-purpose inputs and outputs reduce spare stock requirements.
- Relay output option provides local limit alarm capability.

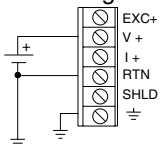


AC Current Sensor Model 5020-350 (ordered separately)

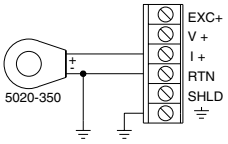
DC Current



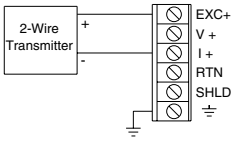
DC Voltage



AC Current Sensor



2-Wire Transmitter



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IntelliPack®: 800T Series

Performance Specifications

General Input

Analog to Digital Converter (ADC)
16-bit Σ–Δ A/D converter.

Ambient Temperature Effect
Better than ±0.005% of input span per °C or ±1µV, whichever is greater.

Noise Rejection
Normal Mode: Better than 40dB @ 60Hz.
Common Mode: Better than 100dB @ 60Hz.

Input Response Time (for input step change)
Less than 100mS typical
to 98% of final output value.

Input Overvoltage Protection
Bipolar Transient Voltage Suppressors (TVS).

DC Current Input

DC Current Input Range (100% rangeable)

Input Ranges	Resolution
0 to 22mA DC	757nA
0 to 5mA DC	189nA

DC Current Input Impedance
24.9 ohms

Excitation Supply (for 2-wire instruments)
+15V DC at 24mA maximum

DC Current Input Accuracy
Better than ±0.05% of input span

DC Voltage Input

DC Voltage Input Ranges (100% rangeable)

Input Ranges	Resolution
±100V DC	3.77mV
±50V DC	1.88mV
±25V DC	942µV
±12V DC	471µV
±6V DC	236µV
±3V DC	118µV

Input impedance
Greater than 500K ohms

DC Voltage Input Accuracy
Better than ±0.05% of input span

AC Current Input

AC Current Input Range (optional)
An optional external AC current sensor is required to monitor AC current signals (Model 5020-350).

AC Current Range	Primary Turns
0 to 20A AC	1
0 to 10A AC	2
0 to 5A AC	4
0 to 2A AC	10
0 to 1A AC	20

AC Current Input Accuracy
Better than ±0.05% of input span

Output (DC V/mA)

D/A Converter
16-bit Σ–Δ

Current Output
Ranges: 0-1mA, 0-20mA, 4-20mA
Compliance: 10V minimum (500Ω load)
Accuracy: 0.025% of span

Voltage Output
Ranges: 0-5V, 0-10V
Compliance: 10mA maximum with short circuit protection. 1Ω output impedance
Accuracy: 0.025% of span

Accuracy (overall input to output)
0.075% of span

Output (Relay)

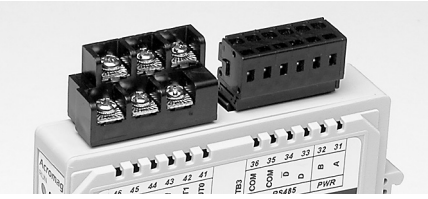
Relay
One SPDT electro-mechanical relay

Relay Ratings (CSA ratings)
25V DC @ 5A
120/240V AC @ 5A

Relay Time Delay
Adjustable alarm delay of up to 25 seconds

Contact Material
Silver-cadmium oxide (AgCdO)

Expected Mechanical Life
20 million operations



Optional terminal blocks: barrier strip (left) and spring clamp (right). Cage clamp terminal is standard.

Environmental

Ambient Temperature
Operating: -25 to 70°C (-13 to 158°F)
Storage: -40 to 85°C (-40 to 185°F)

Relative Humidity
5 to 95%

Power Requirements
10 to 36V DC. 110mA @ 24V. 170mA @ 15V

Isolation (optical)
4-way (input/output/relay/power).
1500V AC for 60 seconds or 250V AC continuous

Radiated Field Immunity (RFI)
EN61000-4-3, EN50082-1

Electromagnetic Field Immunity (EMI)
Less than ±0.25% of output span effect under the influence of electromagnetic fields from switching solenoids, commutator motors, and drill motors.

Electrical Fast Transient (EFT)
EN61000-4-4, EN50082-1

Surge Withstanding Capability (SWC)
EN61000-4-5, EN50082-1

Electrostatic Discharge (ESD)
EN61000-4-2, EN50082-1

Radiated Emissions
EN50081-1 for Class B equipment

Approvals
UL listed (USA, Canada)

Configuration

Software Configuration
Units are fully programmable via the Windows XP/Vista/7 IntelliPack Configuration Program. Configuration downloads from PC through EIA232 serial port using Acromag 800C-SIP kit.

Field Configuration
Output, zero/full-scale, relay setpoint and deadband are configurable via push-buttons and a standard calibrator.

LED Indicators
LEDs indicate power, status, calibration, and alarm.

IntelliPack®: 800T Series

Physical

Enclosure
Case: Self-extinguishing NYLON type 6.6 polyamide thermoplastic UL94 V-2 NEMA Type 1 enclosure.

Connectors (Removable Terminal Blocks)
Wire Range: AWG #14-22 (AWG #12 stranded only)

Printed Circuit Boards
Military grade FR-4 epoxy glass circuit board

Dimensions
1.05W x 4.68H x 4.35D inches
26.7W x 118.9H x 110.5D millimeters

Shipping Weight
1 pound (0.45 Kg) packed

Ordering Information

IMPORTANT: All IntelliPacks require initial software configuration (order 800C-SIP). See Note 1 below.

811T-0500
IntelliPack transmitter unit (DC voltage/current input)

811T-1500
Same as above, plus an SPDT relay output

5020-350
AC current sensor. Required for AC current inputs. See Page 205 for more information.

800C-SIP
Software Interface Package.
Only one kit is required for all IntelliPack models.

4001-095
USB-to-Serial adapter

PS5R-VD24
Power supply (24V DC, 2.1A).

TBK-B01
Optional terminal block kit, barrier strip style, 2 pcs. (For use with 811T-0500 model.)

TBK-B02
Optional terminal block kit, barrier strip style, 4 pcs. (For use with 811T-1500 model with alarm.)

TBK-S01
Optional terminal block kit, spring clamp style, 2 pcs. (For use with 811T-0500 model.)

TBK-S02
Optional terminal block kit, spring clamp style, 4 pcs. (For use with 811T-1500 model with alarm.)

NOTE 1: To order factory configuration, call Acromag for a configuration form which must accompany your order. Also, append "-C" to model number (example: 811T-1500-C). 800C-SIP kit is still recommended.

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