

DPYH-4390U Installation Instructions

Form DPYH4390 II 11-24

NOTICE: The DPYH-4390U devices are certified for use in Class I, Division 1 and 2, Group D hazardous locations when installed in accordance with these instructions.

WARNING: DEVIATION FROM THESE INSTALLATION INSTRUCTIONS MAY LEAD TO IMPROPER OPERATION OF THE MONITORED MACHINE WHICH COULD CAUSE PERSONAL INJURY TO OPERATORS OR OTHER NEARBY PERSONNEL.

APPLICATION NOTE:

Model DPYH-4398U (400 Vdc switch rating) in these Installation Instructions replaces the former Altronic pyrometers below:

DPYH-4394U
DPYH-4396U
DPYH-4398U (50 Vdc switch rating)

See paragraph 1.2 for further information.

NOTE: The term DPYH-4390U used in these instructions refers to all four of the above models.

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1. Description
 2. Mounting
 3. Wiring
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1.0 DESCRIPTION

1.1 GENERAL - The Altronic DPYH-4390U pyrometers are electronic instruments designed to monitor temperature using industry standard type J or K thermocouples. They are powered from a C.D. ignition system or from 12 to 48 Vdc. The device uses a microcontroller to process the input signal and non-volatile memory to store the setup and setpoint values. An LCD displays the channel number and the numeric temperature value in °F or °C. A front mounted keypad serves as the user interface. The instrument can read type J thermocouples between -76°F and 1382°F (-60°C and 750°C) and type K thermocouples between -76°F and 1472°F (-60°C and 800°C).

1.2 MODELS - These instructions cover the devices shown in the chart below. All devices feature an individual setpoint for each channel and a solid-state, normally-open output switch for each channel. Note the current version of the DPYH-4398U has a 400 Vdc output switch rating allowing it to replace all the former devices.

FORMER DPYH DEVICES - NO LONGER IN PRODUCTION			CURRENT DEVICE
DPYH-4394U	DPYH-4396U	DPYH-4398U	DPYH-4398U
4-points with 400 Vdc output switch rating (on back label)	6-points with 50 Vdc output switch rating (on back label)	8-points with 50 Vdc output switch rating (on back label)	8-points with 400 Vdc output switch rating (on back label)
	Application: Do not use with ignition-powered tattletale switches or fuel valves.	Application: Do not use with ignition-powered tattletale switches or fuel valves.	Application: Replaces all former 4, 6 and 8-point DPYH devices

1.3 FUNCTIONALITY - The pyrometer is designed to be versatile and simple to use. Type J or K thermocouples and °F or °C units can be selected from the keypad. The number of points in use and the high limit setpoints for each channel are set from the keypad. An escape key is provided to permit the user to exit any setup function and return to the normal display without any changes. A configurable software filter is also provided which can be used to stabilize readings where the thermocouple signal is fluctuating. Calibration can be performed using the keypad. Factory default configurations, including factory calibration settings, are outlined in this document.

2.0 MOUNTING

Mount the pyrometer inside a control panel or to a suitable flat surface so that the display is at a convenient viewing height. The device mounting dimensions are shown in the figures section at the end of this document, and a template is included with the device. NOTE: Avoid mounting the pyrometer with the LCD display facing direct sunlight. The operating temperature range of the pyrometer including the display is -40°F to $+175^{\circ}\text{F}$ (-40°C to $+80^{\circ}\text{C}$).

3.0 WIRING (SEE WIRING DIAGRAMS)

3.1 THERMOCOUPLES AND THERMOCOUPLE EXTENSION WIRE - Grounded or ungrounded (recommended) type J or K thermocouples may be used. Use thermocouple extension wire of the same type as the thermocouple probe. Use stranded thermocouple wire having a good moisture-resistant insulation such as PVC; for higher ambient temperatures, Teflon or B-fibre insulated thermocouple wire is recommended. To insure an accurate signal is transmitted to the instrument, avoid any added junctions, splices and contact with other metals. Take care not to damage the insulation when installing and take precautions against later damage from vibration, abrasion, or liquids in conduits.

NOTE: It is essential that the following practices be adhered to:

- All unused thermocouple inputs to the pyrometer must be shunted.
- All thermocouples must be the same type, either type J or K.
- Never run thermocouple wires in the same conduit as the ignition wiring or other high energy wiring such as AC line power.
- Keep secondary wires to spark plugs and other high voltage wiring at least eight inches (200mm) away from thermocouples and extension wiring.
- If it becomes necessary to check thermocouple to terminal strip wiring, first UNPLUG THE THERMOCOUPLE CONNECTORS from the pyrometer. This will prevent damage to the device's sensitive low voltage detection circuitry.

3.2 POWER WIRING - Power can be from either a 100 to 400 volt C.D. ignition system or from a 12 to 48 Vdc (10 mA max.) source.

C.D. IGNITION SYSTEM: Connect the ignition shutdown lead to terminal IGN IN. The ground terminal GND is connected to panel ground which should be the same as engine ground. DO NOT ground this device directly to the ignition system common coil ground.

12-48 VDC POWER: Connect the DC power input wires, plus to terminal DC+ IN and minus to terminal GND.

3.3 OUTPUT SWITCH WIRING - When the temperature of a channel exceeds its setpoint, the corresponding output will turn on to the switch COM (negative) terminal. Each channel has its own dedicated output. See the chart in section 1 for the voltage rating for each particular model. In all cases, the output switches can be wired to an Altronic annunciator system or to pilot duty relays as shown in the wiring diagrams. Use only devices with a 400V. switch rating to wire directly to ignition-powered tattletale relays or fuel valves.

3.4 HAZARDOUS AREA OPERATION - The DPYH-4390U pyrometers are CSA certified for *CLASS I, DIVISION 1 AND 2, GROUP D* areas as described below.

CLASS I, GROUP D, DIVISION 2: Certified when mounted in a suitable panel enclosure.

CLASS I, GROUP D, DIVISION 1: Certified as intrinsically safe if the following conditions are met:

- With a CD ignition power source, the pyrometer must be powered through an Altronic 690107 or 690108 barrier. With a DC power source, the pyrometer must be powered through a CSA-certified zener barrier rated 30 volts max., 120 ohms min.
- The switch outputs must be connected to the sensor inputs of an Altronic DA or DD annunciator system with the 690 series power supply.

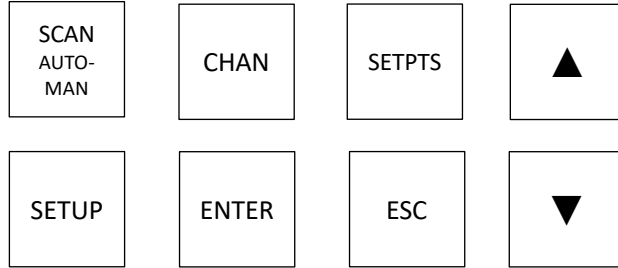
In addition, the following requirements must be met (see NFPA standard no. 493):

- The intrinsically-safe instrument wires within the panel enclosure must be kept at least two (2) inches away from other wiring. Run the thermocouple extension wires leaving the panel in a separate conduit from all other wiring and keep them separate throughout the installation.
- Wiring to the sensors must have a grade of insulation capable of withstanding an AC voltage of 500 volts RMS.
- Sensor wires must be run in separate conduits and junction boxes from high voltage wires such as ignition, fuel valve, and other high voltage wiring.

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY AND/OR SUITABILITY FOR CLASS I, DIVISION 2.

DO NOT DISCONNECT EQUIPMENT IN A DIVISION 2 ENVIRONMENT UNLESS POWER IS SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

4.0 KEYPAD DESCRIPTION



KEYPAD - The pyrometer contains an eight-key front keypad which is used to view or change the setpoint values and to configure and calibrate the pyrometer. The eight front panel keys are shown above: SCAN AUTO-MAN, SETUP, CHAN, ENTER, SETPTS, ESC, and ▲ ▼ (up and down arrow keys). Only one key should be pressed at a time.

SCAN AUTO-MAN – The SCAN AUTO-MAN key selects whether the scan through the channels will be automatic or manual. In AUTO mode, the channels are displayed at the rate of approximately every two seconds starting with Channel 1. In MAN (manual) mode, the selected channel remains displayed until the CHAN key is pressed to move to the next channel.

SETUP - The SETUP key is used to scroll through the pyrometer setup menu.

CHAN - The channel key allows the user to increment the displayed channel and corresponding temperature value. Each press of the channel key increments to the next channel and corresponding temperature value, one at a time.

ENTER - The ENTER key is used to save new data or a new configuration in non-volatile memory. The setup will remain even through power-down.

SETPTS - The SETPTS (setpoints) key is used to view or change each setpoint value. When pressed, the message "StP" is displayed followed by the setpoint temperature for channel 1. Refer to section 7 for additional information.

ESC - The ESC (escape) key can be used at any time to return to the normal mode. When the ESC key is pressed in any configuration mode, the configuration returns to the previous stored values and the display returns to the normal reading.

▲ ▼ - The up and down arrow keys are used to scroll through the selections in the setup mode and to increase or decrease values for setpoints, calibration, number of points and the filter screen.

5.0 GENERAL OPERATION

5.1 NORMAL - When the DPYH-4390U pyrometer is in the "normal" mode, it displays the channel number, numeric temperature value and either °F or °C: "#:XXXX". The digit (#) to the left of the colon indicates the displayed channel. The numbers (XXXX) to the right of the colon indicate the temperature associated with that particular channel. Each press of the CHAN key increments to the next channel and corresponding temperature value.

5.2 ALARM - When any channel's measured temperature value exceeds its setpoint value, an LCD indicator "AL" (for alarm) will display and the associated output will turn on.

5.3 OUT OF RANGE - Certain conditions cause an out-of-range indication.

- A reading of "#:LO" indicates a monitored temperature below the minimum range of the instrument (-76°F or -60°C).
- A reading of "#:HI" indicates a monitored temperature above the maximum range of the instrument or an open thermocouple condition. The maximum range is 1382°F or 750°C for type J, 1472°F or 800°C for type K. In the case of an open or disconnected thermocouple, the output switch will also turn on. NOTE: All unused thermocouple inputs must be shunted to prevent this condition.

6.0 GAUGE CONFIGURATION

6.1 GENERAL - The pyrometer must be configured for proper operation. To configure the device, press the SETUP key as specified below. The attributes are listed on the next page:

- A flowchart is provided in the figures section that shows step-by-step progression through the pyrometer configuration procedure.
- During configuration, the pyrometer allows 15 seconds for first level and 60 seconds for other levels between keystrokes to view or change and save a new configuration. If the time lapses without a keystroke, the pyrometer will automatically return to the normal reading mode without making any changes. You can also exit the setup mode at any point before the final ENTER command by pressing the ESC key; the prior value will be retained in memory. New information is saved only if the ENTER key is pressed and the display reads "SAVE/donE".

The chart on the next page shows the configuration steps required to set-up the device.

The first two steps (*) below are required to properly operate the instrument. The No. of Scanned Points is also recommended to be set if monitoring fewer than the maximum number of channels available. The other items allow the user to re-calibrate or customize the instrument to specific preferences; in many cases the factory default settings will suffice for these.

Temperature Units * (paragraph 6.1 A.)	dEG °F : dEG °C
	↓
Thermocouple Type * (paragraph 6.1 B.)	Type J : Type K
	↓
Calibration (paragraph 6.1 C.)	New devices are factory calibrated. See section 8.
	↓
No. of Scanned Points (paragraph 6.1 D.)	No. of Points to be Scanned and Displayed Default is No. of Points in Device (4,6,8)
	↓
Protection (paragraph 6.1 E.)	ON : OFF Default is OFF
	↓
Filter (paragraph 6.1 F.)	1 to 255 Default is 230

A. "dEG °F / dEG °C" UNITS - Select the temperature units °F or °C. The indicators appear on the right side of the display. To change the unit indicator:

1. Press the SETUP key until the display reads either "dEG °F" or "dEG °C".
2. Use the ▲ or ▼ arrow key to select the desired readout units, and press ENTER to save the units selection.

B. "J:tc / K:tc" THERMOCOUPLE TYPE - The instrument can read either type J or K thermocouples.

1. Press the SETUP key until the display reads either "J:tc" or "K:tc".
2. Use the ▲ or ▼ arrow key to select a thermocouple type and press ENTER to save the new thermocouple type.

NOTE: Pressing ENTER again here will return all of the adjustable parameters to factory default values. This includes the output switch setpoints resetting to the default value of 1000°F. When verifying the type, press ESC to exit without reloading the default values.

C. "CAL" CALIBRATION - see section 8 for calibration procedures.

D. "X.PtS" NUMBER OF POINTS - This feature allows the user to select the number of channels to be viewed and monitored. The selection can be any number from 1 to the maximum number of points (4, 6 or 8) in the device. Points not selected will have their associated outputs set to the open (not active) state. Channel 1 is always used, and the remaining points follow in numerical order.

To set the SCAN function: (factory default is the maximum no. of points for the device – 4,6,8)

1. Press the SETUP key until the display reads "X.PtS".
2. Use the ▲ or ▼ arrow key to get the desired selection and press ENTER.

E. "P:On / P:OFF" PROTECTION STATUS - This feature allows the user an added layer of protection by preventing the setpoints from inadvertently being changed. When protection is "On", the user is able to view the setpoint values but is not able to change them. If the ▲ or ▼ arrow keys are pressed when protection is on with the display in the setpoints mode, the display will read "no" and return to the normal display mode.

To set the Protection Status: (factory default is "P:OFF")

1. Press the SETUP key until the display reads either "P:On" or "P:OFF".
2. Use the ▲ or ▼ arrow key to get the desired selection and press ENTER.

NOTE: To adjust the setpoint limits, the protection status must be set to "OFF" which will allow new settings per section 7. This feature may be turned on and off as many times as needed.

F. "FILt" DISPLAY FILTER - The display filter can be used to stabilize the display reading of a changing input. Filtering is done in both hardware and software. The software filter is an adjustable filter; the rate of change is slower for large values. The filter value is set in a number from 1 to 255, 1 being no filter value and 255 being maximum filter value. Below are some typical filter values and their effect on the display reading. Settling values are approximate times in seconds to reach 90% of a new reading.

To set the filter value: (factory default is 230)

1. Press the SETUP key until the display reads "FILt" and press ENTER. The display will read the previously set filter value.
2. Use the ▲ or ▼ arrow key to increase or decrease the filter value as desired and press ENTER to save the new filter value.

NOTE: The output switch reaction time is affected by the filter settling time.

FILTER VALUE	1	128	200	210	220	230	240	250	253	255
SETTLING TIME, SECS.	1.0	1.5	3.5	4.5	5.5	7.5	11.5	30	60	180

7.0 SETPOINTS

7.1 SETPOINTS - There is an individually adjustable high setpoint for each channel which can be set anywhere within the range of the device. When the SETPTS key is pressed, the display will show "n:XXXX". The number "n" to the left of the colon represents the setpoint being viewed. The number "XXXX" to the right of the colon is the numeric high limit value for that setpoint.

7.2 ADJUSTMENT - To adjust the displayed value (factory default is 1000°F. for all channels):

1. Press the SETPTS key until the 1st setpoint displays "n:XXXX".
2. Press the ▲ or ▼ arrow keys to increase or decrease the value until the desired high limit point is displayed.
3. Press ENTER to save the new value.
4. Then press the SETPTS key until the 2nd setpoint displays "n:XXXX" and repeat steps 2 and 3 above. Repeat this sequence until all setpoints are established.

You can exit the setpoints process prior to step 3 above by either waiting 15 seconds without pressing a key or by pressing the ESC key. The prior value will be retained in memory.

NOTE: It is possible to lockout easy changes to the setpoint values – see Protection Status paragraph 6.1 E.

7.3 HYSTERESIS - The setpoint has a fixed hysteresis value of 10°F or 5°C. Example: If the temperature setpoint is set to 900°F, the output switch will close when the temperature reaches 900°F and stay tripped or closed until the temperature drops below 890°F; at that point the switch will return to the open state.

8.0 CALIBRATION

8.1 GENERAL - The instrument is calibrated at the factory and should not require additional calibration. However, calibration can be performed in the field many times over the life of the device. The calibration mode is used to calibrate the zero and span values of the device. A thermocouple calibrator or simulator is required to provide a calibration reference.

NOTE: During calibration, the DPYH-4390U allows 60 seconds between keystrokes to change or save a new calibration. If 60 seconds lapse without a keystroke, the device will automatically return to the normal mode with the previous values. The new calibration information is saved only if the ENTER key is pressed and the gauge reads "SAVE/donE".

8.2 CALIBRATION PROCEDURE - Connect the proper thermocouple simulator, either type J or K, using matching thermocouple extension wire to the pyrometer input channel 1. The pyrometer **MUST** be calibrated on channel 1 only but will apply to all channels. Be sure the units (°C or °F) of the calibrator match the units of the instrument before performing a calibration. To calibrate the pyrometer:

1. Press the SETUP key until the display reads "CAL" and press ENTER; the display will read "1:CAL".
2. Adjust the simulator for a very low reading (0° F.) and press ENTER.
3. Use the ▲ or ▼ arrow keys to increase or decrease the display reading to match the setting of the simulator and press ENTER. The display will now read "2:CAL".
4. Adjust the simulator for a very high reading (1000°F) and press ENTER.
5. Use the ▲ or ▼ arrow keys to increase or decrease the display reading to match the simulator and press ENTER. The display will read "SAVE/donE" and will return to the normal reading with the new calibration values stored in permanent memory.

"TWEAK" ADJUSTMENT - The pyrometer has a feature that allows a slight adjustment of either the zero or span values individually. This type of calibration can be used to "tweak" the readout to match that of a known value without actually performing a formal calibration procedure. This adjustment must be performed only on channel 1. NOTE: This type of adjustment will invalidate calibration settings resulting from the procedures in the CALIBRATION PROCEDURE paragraph above.

- Zero Adjustment Only - To make a small adjustment on the zero calibration value of the pyrometer:
 1. Press the SETUP key until the display reads "CAL" and press ENTER; the display will read "1:CAL".
 2. With the standard at or near 0, press ENTER and use the ▲ or ▼ arrow keys to increase or decrease the display reading to match the standard and press ENTER. The display will read "2:CAL".
 3. Press the SETUP key and the display will read "SAVE/donE" and will return to the normal reading with the new zero calibration value stored in permanent memory.
- Span Adjustment Only - To make a small adjustment on the span point of the pyrometer:
 1. Press the SETUP key until the display reads "CAL" and press ENTER; the display will read "1:CAL".
 2. Press the SETUP key and the display will read "2:CAL".
 3. With the standard at or near the desired span value, press ENTER and use the ▲ or ▼ arrow keys to increase or decrease the display reading to match the standard and press ENTER. The display will read "SAVE/donE" and will return to the normal reading with the new span calibration value stored in permanent memory.

FIGURES SECTION:

Configuration Worksheet

Mounting Dimensions and Specifications

Flowchart – DPYH-4394U

Flowchart – DPYH-4396U, DPYH-4398U

General Wiring Diagram – DPYH-4394U

General Wiring Diagram – DPYH-4396U, DPYH-4398U

Wiring Diagram, Altronic Annunciator – DPYH-4390U

Wiring Diagram, DC Relay – DPYH-4390U

Wiring Diagram, Tattletale or Pneumatic Valve – DPYH-4390U

CONFIGURATION WORKSHEET:

SITE: _____

MODEL NO. _____

SERIAL NO. _____

UNITS: _____ °F. _____ °C.

TC TYPE: _____ J _____ K

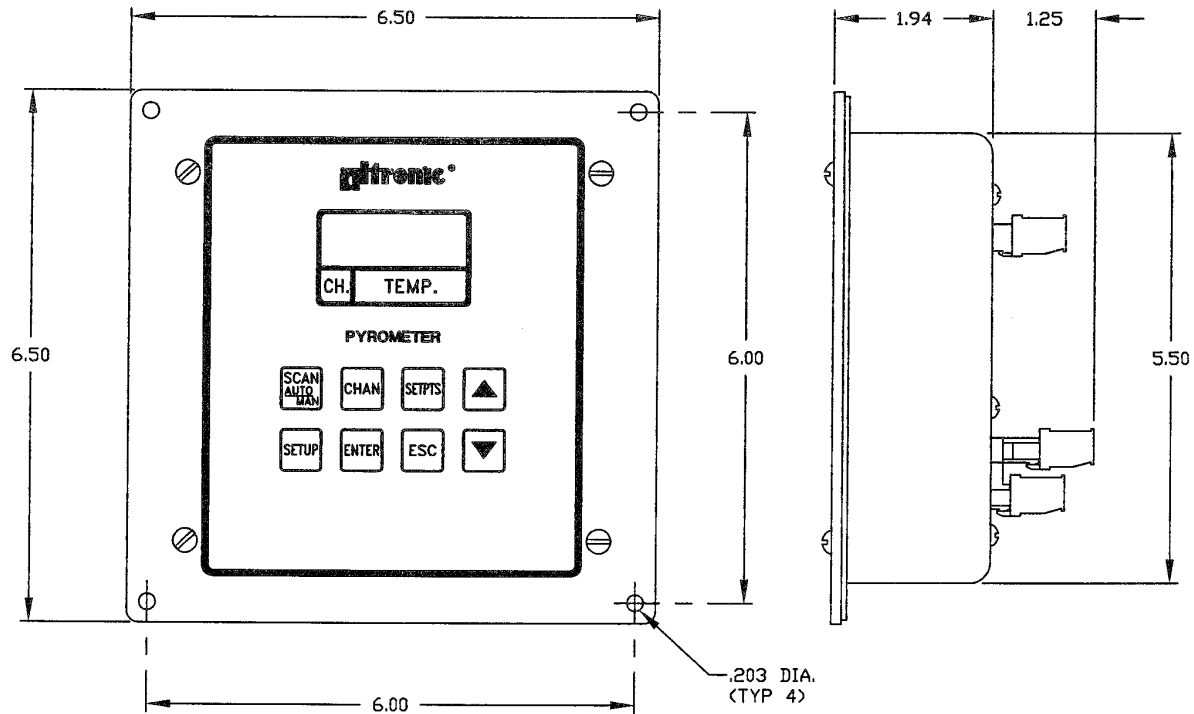
X.PTS: _____ Points Monitored (default is max. points in device)

SETPOINT PROTECTION: _____ OFF _____ ON (default is OFF)

FILTER: _____ (1 min. to 255 max.) (default is 230)

SETPOINTS: #1 _____ °F or °C (default is 1000°F)
#2 _____ °F or °C (default is 1000°F)
#3 _____ °F or °C (default is 1000°F)
#4 _____ °F or °C (default is 1000°F)
#5 _____ °F or °C (default is 1000°F)
#6 _____ °F or °C (default is 1000°F)
#7 _____ °F or °C (default is 1000°F)
#8 _____ °F or °C (default is 1000°F)

DPYH-4390U MOUNTING DIMENSIONS AND SPECIFICATIONS



SPECIFICATIONS:

POWER REQUIRED: C.D. IGNITION POWERED 100-400V OR DC POWERED 12-48VDC 10MA MAX.

THERMOCOUPLE TYPE: "J" (IRON-CONSTANTAN) OR "K" (CHROMEL-ALUMEL) - ALL THE SAME

TEMPERATURE SCALE: PROGRAMMABLE °C OR °F.

DISPLAY: 0.4" 4-1/2 DIGIT LCD WITH °C, °F AND AL INDICATORS.

DISPLAY UPDATE RATE: 2.25 SECONDS NOMINAL

SCAN RATE: 2.25 SECONDS NOMINAL

RANGE: TYPE "J" THERMOCOUPLE -60°C TO 750°C OR -76°F TO 1382°F.

TYPE "K" THERMOCOUPLE -60°C TO 800°C OR -76°F TO 1472°F.

OUTPUT SWITCH: 1 PER CHANNEL, N/O HIGH ALARM SOLID STATE SWITCHES
 RATED 400VDC 0.15 AMP OR 50VDC, 0.1 AMP CONTINUOUS (SEE BACK LABEL)
 HYSTERESIS FIXED AT 5°C OR 10°F

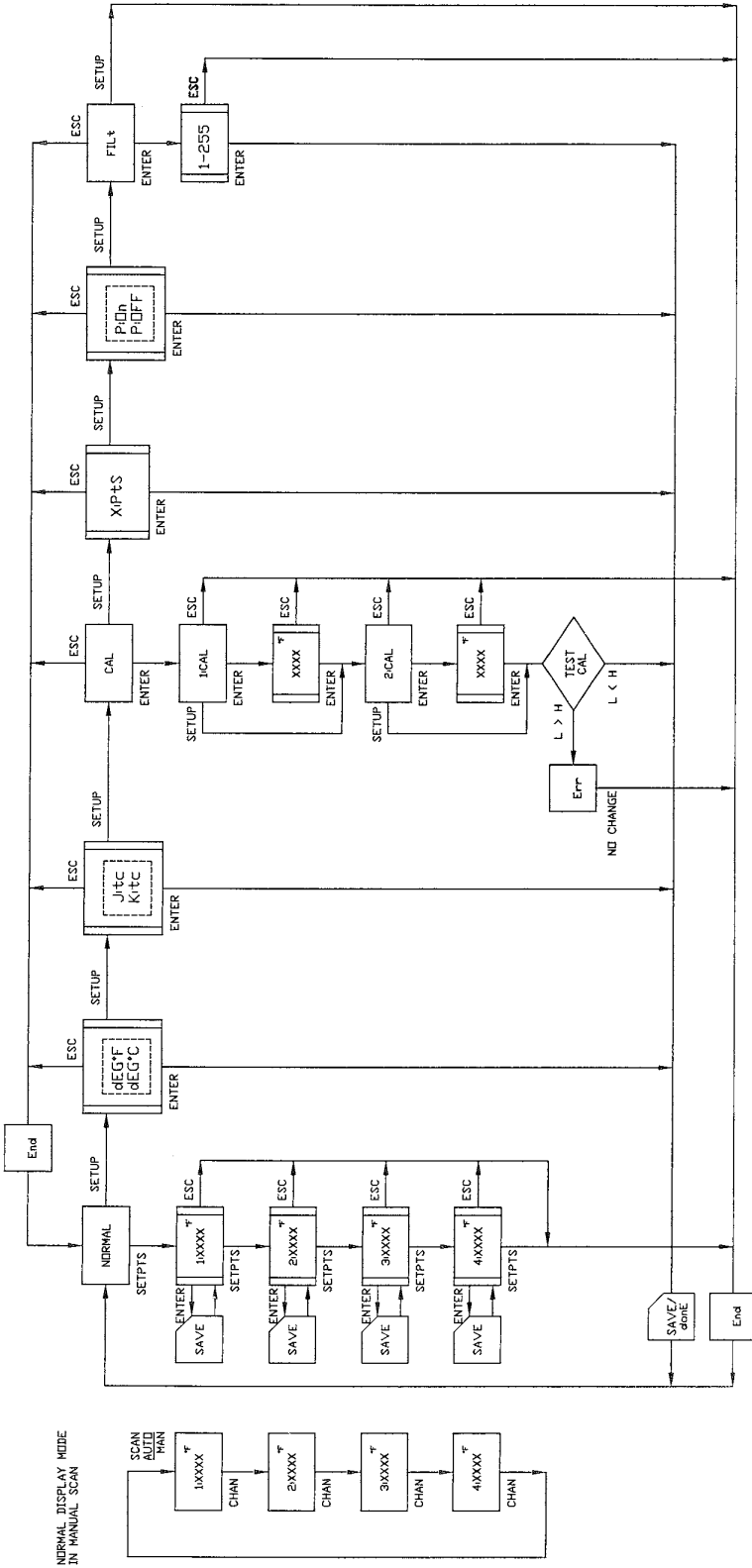
SWITCH RESPONSE TIME: TIED TO FILTER VALUE AND DISPLAY READING
 (WITH FILTER AT 1, MAX RESPONSE TIME APPROX. 1 SECOND)

AMBIENT TEMPERATURE RANGE: -40°C TO 80°C OR -40°F TO 175°F.

INSTRUMENT ACCURACY: ±1%, ±3 DEGS (EXCLUSIVE OF THERMOCOUPLE ERROR)

HAZARDOUS ARE CLASSIFICATION: CLASS I, GROUP D, DIV. 2
 CLASS I, GROUP D, DIV. 1 WHEN IGNITION POWERED
 FROM ALTRONIC 690107 OR 690108 BARRIER OR WHEN
 DC POWERED FROM A CSA CERTIFIED ZENER BARRIER
 RATED 30 VOLTS MAX., 120 OHMS MIN.

DPYH-4394U FLOWCHART



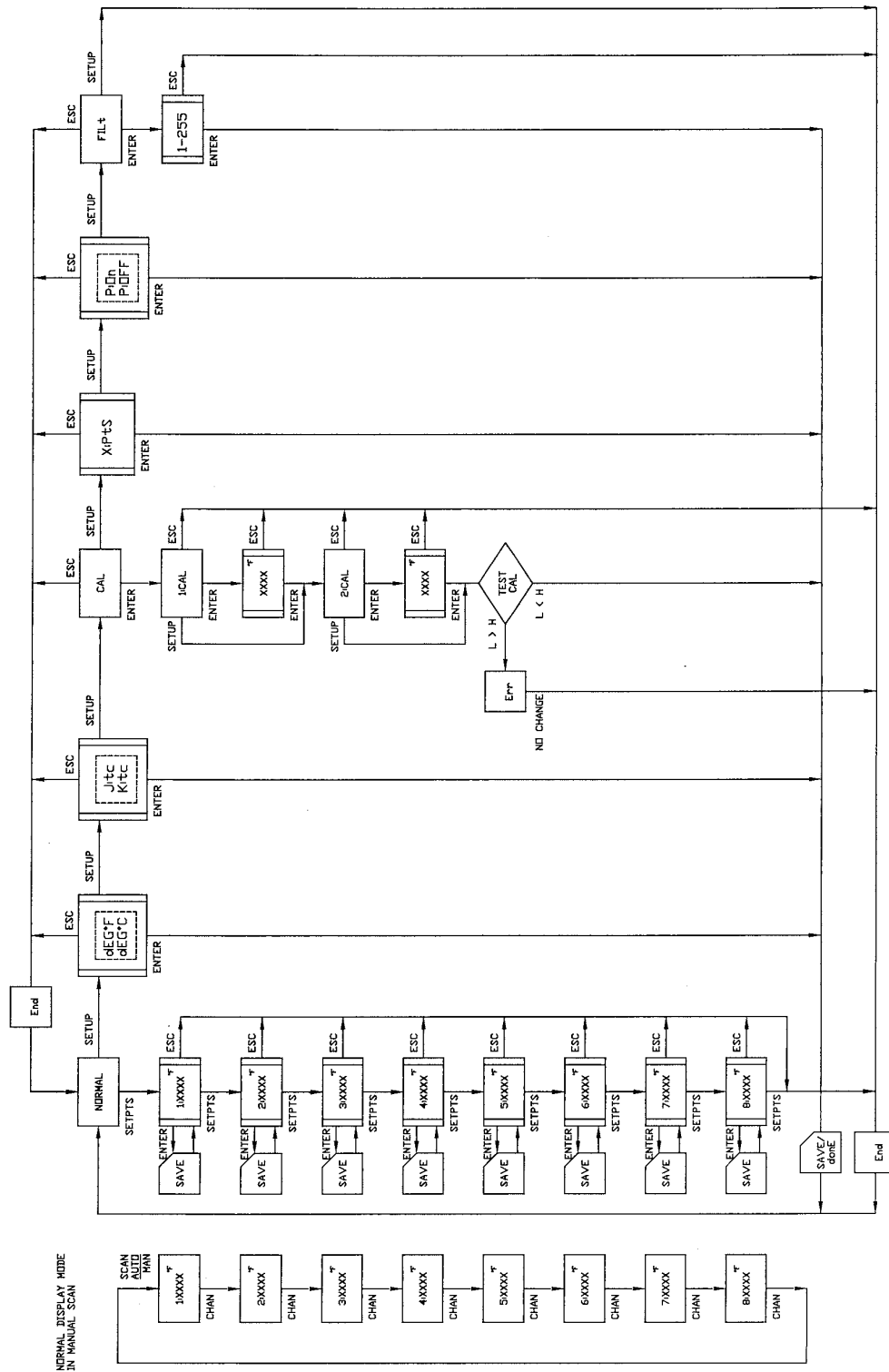
SCAN AUTO/MAN: AUTO - DISPLAYS EACH CHANNEL NUMBER AND CORRESPONDING TEMPERATURE FOR APPROXIMATELY 0.5 SECONDS.
 MANUAL - DISPLAYS A CHANNEL CONTINUOUSLY AND THE NEXT CHANNEL WITH THE PRESS OF THE CHAN KEY.

CHAN: THE CHANNEL BUTTON, WHEN PRESSED, DISPLAYS THE NEXT CHANNEL NUMBER AND TEMPERATURE VALUE.

SETPTS: WHEN THE SETPTS KEY IS PRESSED THE SETPOINT WILL BE DISPLAYED FOR 16 SECONDS AND WILL AUTOMATICALLY REVERT BACK TO THE NORMAL DISPLAY MODE.
 WHEN THE SETPTS KEY IS PRESSED FOR A SECOND TIME THE VALUE WILL BE RECALCULATED AND DISPLAYED FOR 16 SECONDS. RECALCULATING AND REFRESHING THE TIMER.
 PRESSING THE ENTER KEY SAVES THE NEW VALUE AND DISPLAYS THE SAME SETPOINT. PRESSING THE SETPTS KEY AGAIN MAKES THE SETPOINTS BECOME MANUAL SCAN
 AND TAKES YOU TO NEXT SETPOINT. IF THE ESC KEY IS PRESSED THE DISPLAY WILL REVERT BACK TO THE NORMAL DISPLAY MODE AND RETAIN THE PREVIOUS SETPOINT VALUE.

DEFAULT SETTINGS SELECT FOR THERMOCOUPLE TYPE	J DR K THERMOCOUPLE	SETPOINTS: 1000	FLOWCHART KEY	DASHED LINES - MAKE SELECTION	XP+S = MAXIMUM NUMBER OF POINTS DISPLAYED IN SCAN CYCLE.	POFF = SETPOINTS ARE CHANGEABLE. PON = SETPOINTS ARE NOT CHANGEABLE.
	°F OR °C UNITS	IN DEG. F				
4 POINTS SETPOINT PROTECTION OFF	△ DOUBLE BARS - DOWN ARROW KEYS TO SCROLL	XXXX	°C/°F			
FILTER 0.0						

DPYH-4396U/4398U FLOWCHART



SCAN AUTO/MAN: AUTO - DISPLAYS EACH CHANNEL NUMBER AND CORRESPONDING TEMPERATURE FOR APPROXIMATELY 2.56 SECONDS. MANUAL - DISPLAYS A CHANNEL CONTINUOUSLY AND THE NEXT CHANNEL WITH THE PRESS OF THE SCAN KEY.

CHAN: THE CHANNEL BUTTON, WHEN PRESSED, DISPLAYS THE NEXT CHANNEL NUMBER AND TEMPERATURE VALUE.

SETPtS: WHEN THE SETPtS KEY IS PRESSED, THE SETPOINT WILL BE DISPLAYED FOR 16 SECONDS AND WILL AUTOMATICALLY REVERT BACK TO THE NORMAL DISPLAY MODE. IF YOU USE THE SETPtS KEY TO INCREASE OR DECREASE THE SETPOINT, YOU WILL BE PROMPTED TO ENTER THE NEW SETPOINT. PRESSING THE ENTER KEY DOES NOT SAVE AND TAKES YOU TO NEXT SETPOINT. IF THE ESC KEY IS PRESSED THE DISPLAY WILL REVERT BACK TO THE NORMAL DISPLAY MODE AND RETAIN THE PREVIOUS SETPOINT VALUE.

DEFAULT SETTINGS

J OR K THERMOCOUPLE SETPOINTS: 1000
 F OR C UNITS
 SELECT 'P' OR 'K' SETPOINT PROTECTION OFF
 THERMOCOUPLE TYPE FILTER: 230

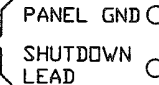
FLOWCHART KEY

△ DOUBLE BARS - USE UP AND DOWN ARROW KEYS TO SCROLL
 XXXX ENTER
 iEGC iEGFC DASHED LINES - SELECTION
 XIPtS MAXIMUM NUMBER OF POINTS DISPLAYED IN SCAN CYCLE
 PiCh PiOFF SETPOINTS ARE NOT CHANGEABLE
 PiCh PiOFF SETPOINTS ARE NOT CHANGEABLE

DPYH-4394U GENERAL WIRING DIAGRAM

NOTE: OUTPUT SWITCHES ARE NORMALLY OPEN RATED 400VDC, 0.15 AMP CONTINUOUS. EACH SWITCH TURNS ON TO COMMON WHICH IS ISOLATED FROM THE GND TERMINAL. COMMON SHOULD BE MINUS WITH RESPECT TO EACH OUTPUT SWITCH.

CD IGNITION POWER INPUT 100-400V

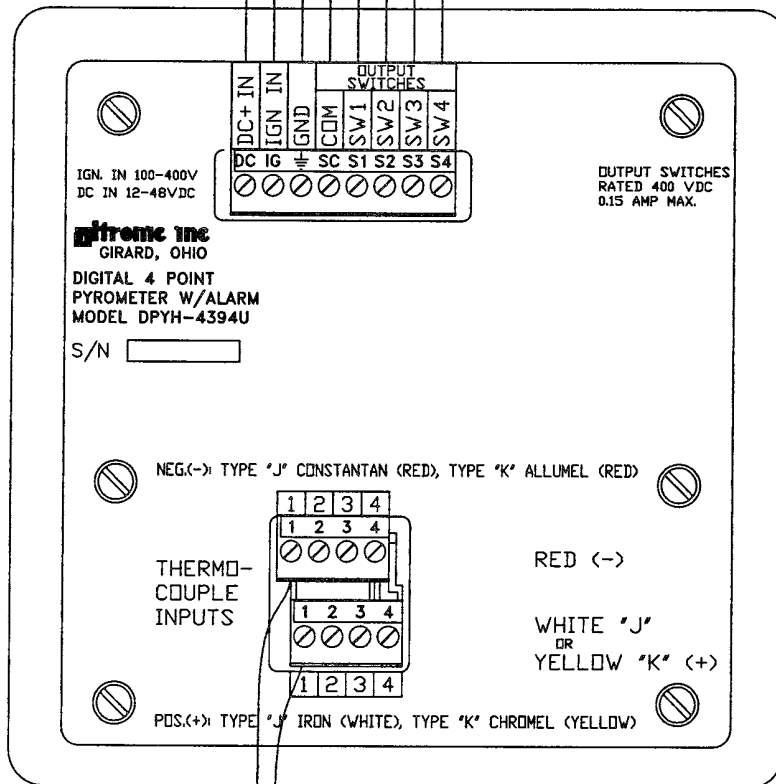


12-48VDC POWER INPUT 10mA MAX.



NOTE: PYROMETER MAY BE POWERED FROM A CD IGNITION SYSTEM OR DC VOLTAGE SOURCE

SWITCH COMMON
OUTPUT SWITCH 1
OUTPUT SWITCH 2
OUTPUT SWITCH 3
OUTPUT SWITCH 4



THERMOCOUPLE JUNCTION

EXTENSION CABLE MUST BE THERMOCOUPLE WIRE TO MATCH DEVICE TYPE (J OR K)

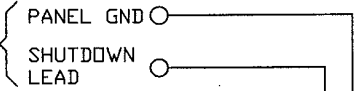
NOTES:

1. ALWAYS USE POINT 1 AND PROCEED IN SUCCESSION TO THE HIGHEST POINT REQUIRED.
2. ALL THERMOCOUPLES AND EXTENSION WIRE MUST BE OF THE SAME TYPE. ALL CONNECTIONS TO BE CLEANED, TIGHTLY TWISTED AND INSULATED WITH CERAMIC WIRE NUTS.
3. ALL UNUSED THERMOCOUPLE INPUTS MUST BE SHUNTED FOR PROPER OPERATION.
4. THERMOCOUPLES SHOULD BE EITHER ALL UNGROUNDED OR ALL GROUNDED.
5. IF SWITCH COMMON (TERMINAL "COM") IS WIRED ISOLATED FROM (NOT THE SAME POTENTIAL AS) INSTRUMENT POWER SUPPLY GROUND, THE USE OF UNGROUNDED THERMOCOUPLES IS REQUIRED.

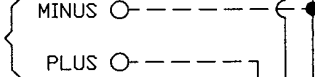
DPYH-4396U/4398U GENERAL WIRING DIAGRAM

NOTE: OUTPUT SWITCHES ARE NORMALLY OPEN RATED 50VDC, 0.1 AMP CONTINUOUS. EACH SWITCH TURNS ON TO COMMON WHICH IS ISOLATED FROM THE GND TERMINAL. COMMON SHOULD BE MINUS WITH RESPECT TO EACH OUTPUT SWITCH.

CD IGNITION POWER INPUT
100-400V

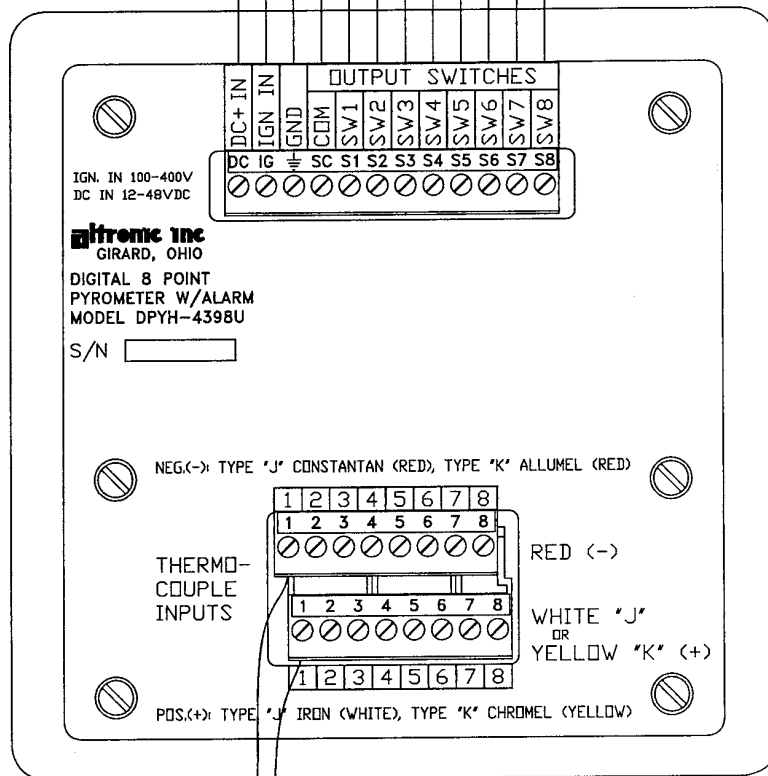


12-48VDC POWER INPUT
10mA MAX.



NOTE: PYROMETER MAY BE POWERED FROM A CD IGNITION SYSTEM OR DC VOLTAGE SOURCE

- SWITCH COMMON
- OUTPUT SWITCH 1
- OUTPUT SWITCH 2
- OUTPUT SWITCH 3
- OUTPUT SWITCH 4
- OUTPUT SWITCH 5
- OUTPUT SWITCH 6
- OUTPUT SWITCH 7
- OUTPUT SWITCH 8



THERMOCOUPLE JUNCTION

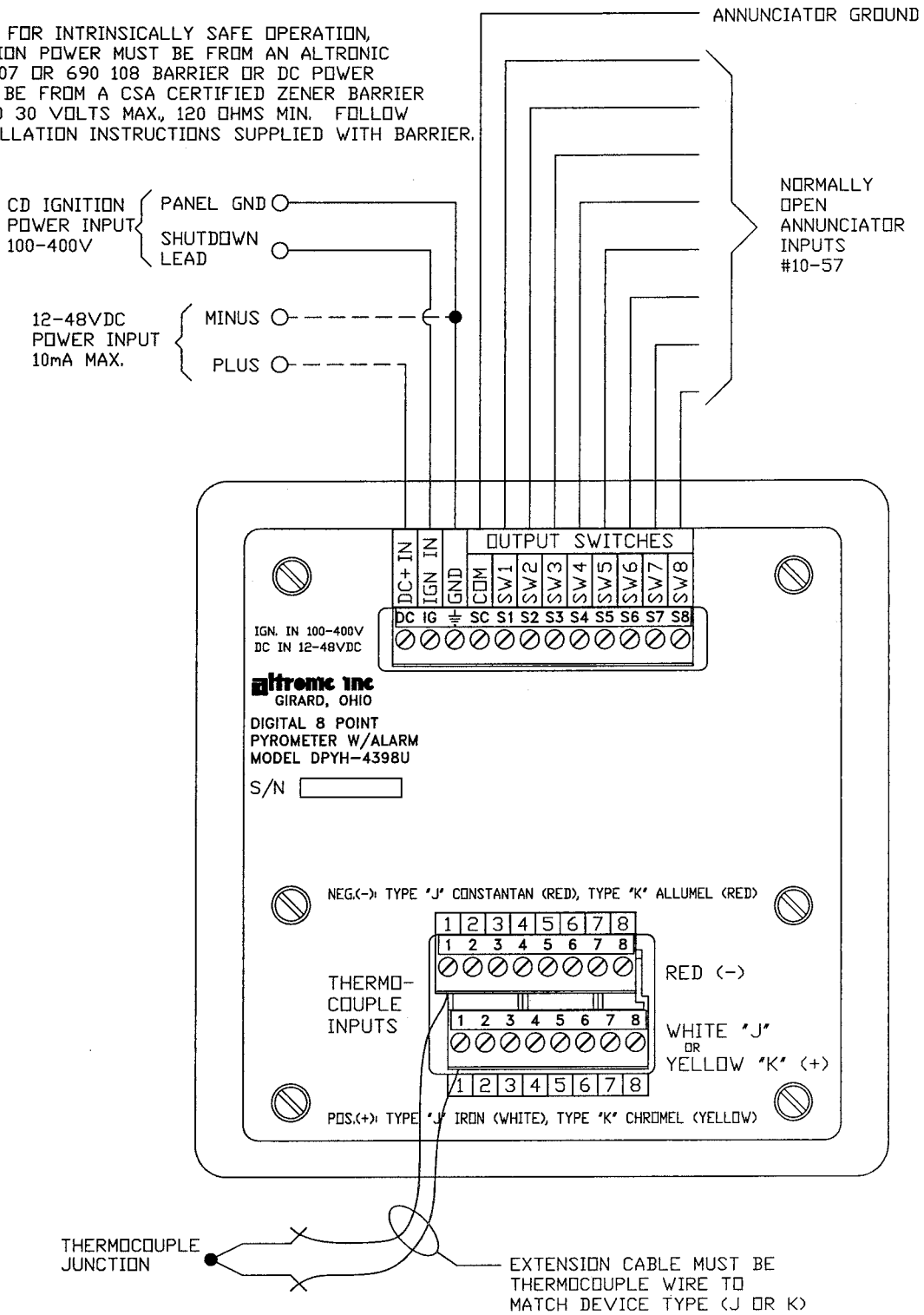
EXTENSION CABLE MUST BE THERMOCOUPLE WIRE TO MATCH DEVICE TYPE (J OR K)

NOTES:

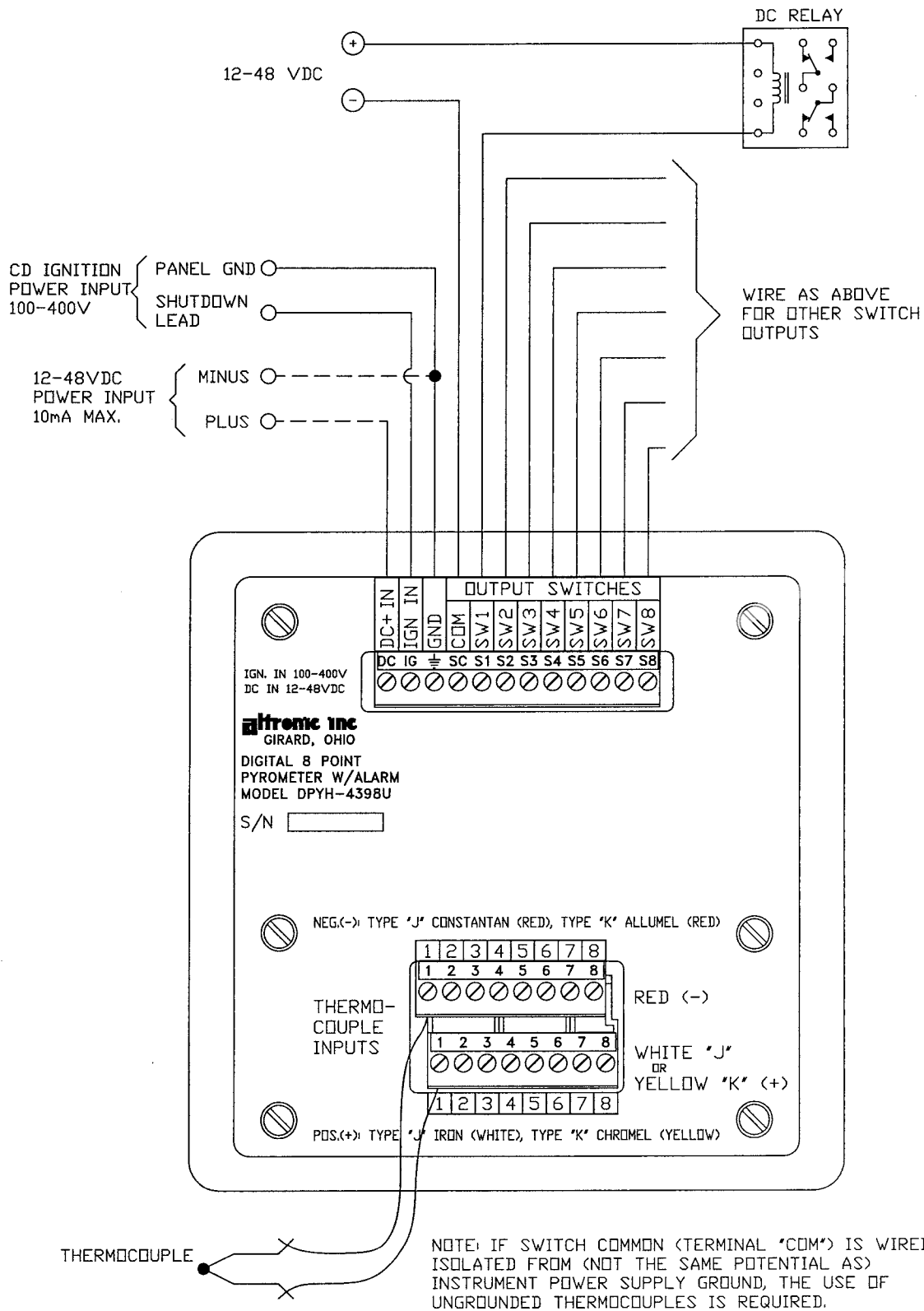
1. ALWAYS USE POINT 1 AND PROCEED IN SUCCESSION TO THE HIGHEST POINT REQUIRED. POINTS 7 AND 8 ARE NOT AVAILABLE ON 6 POINT MODEL.
2. ALL THERMOCOUPLES AND EXTENSION WIRE MUST BE OF THE SAME TYPE. ALL CONNECTIONS TO BE CLEANED, TIGHTLY TWISTED AND INSULATED WITH CERAMIC WIRE NUTS.
3. ALL UNUSED THERMOCOUPLE INPUTS MUST BE SHUNTED FOR PROPER OPERATION.
4. THERMOCOUPLES SHOULD BE EITHER ALL UNGROUNDED OR ALL GROUNDED.
5. IF SWITCH COMMON (TERMINAL "COM") IS WIRED ISOLATED FROM (NOT THE SAME POTENTIAL AS) INSTRUMENT POWER SUPPLY GROUND, THE USE OF UNGROUNDED THERMOCOUPLES IS REQUIRED.

DPYH-4390U WIRING DIAGRAM – ALTRONIC ANNUNCIATOR

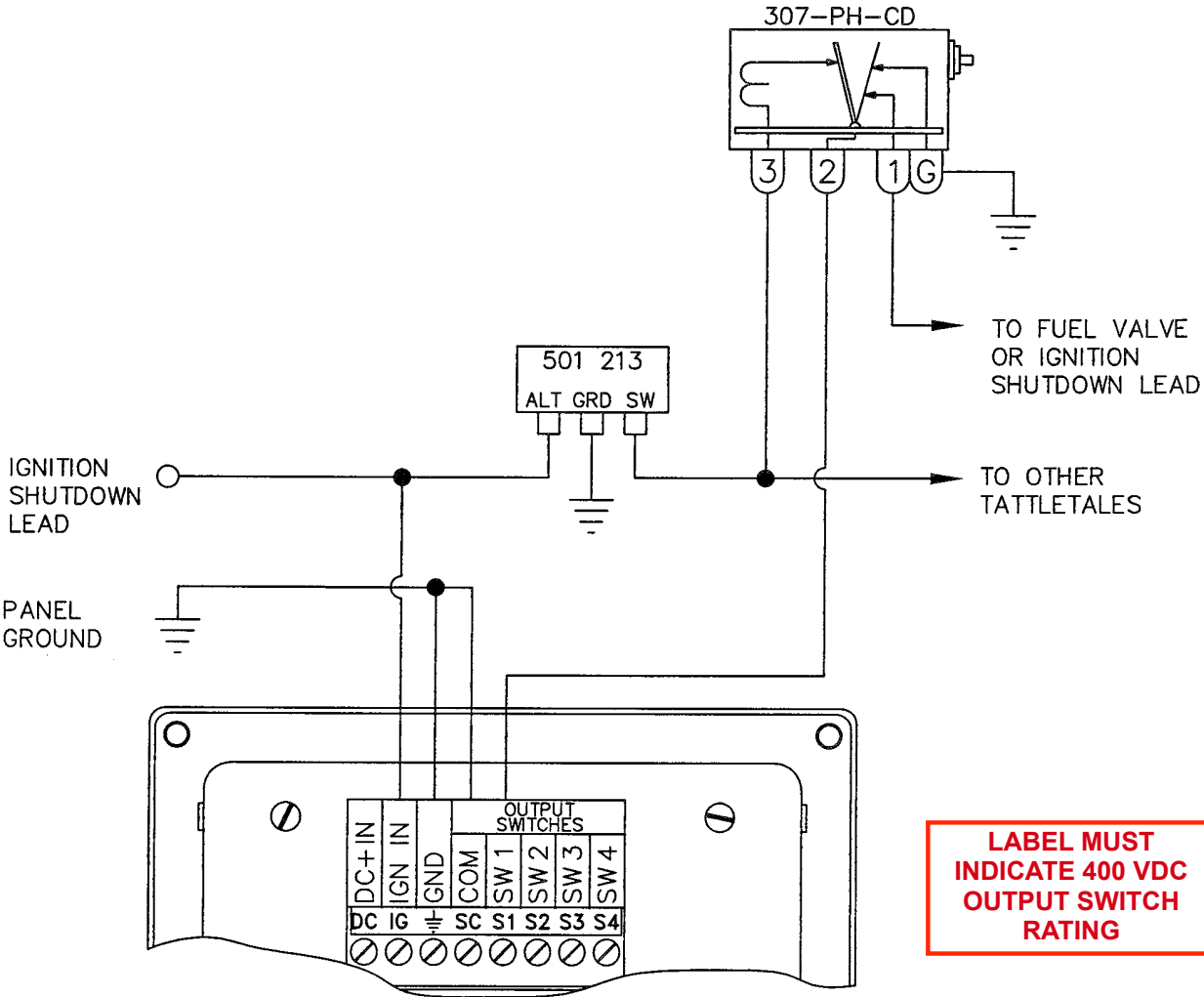
NOTE: FOR INTRINSICALLY SAFE OPERATION, IGNITION POWER MUST BE FROM AN ALTRONIC 690 107 OR 690 108 BARRIER OR DC POWER MUST BE FROM A CSA CERTIFIED ZENER BARRIER RATED 30 VOLTS MAX., 120 OHMS MIN. FOLLOW INSTALLATION INSTRUCTIONS SUPPLIED WITH BARRIER.



DPYH-4390U WIRING DIAGRAM – DC RELAY



DPYH-4390U WIRING DIAGRAM – TATTLETALE



**LABEL MUST
INDICATE 400 VDC
OUTPUT SWITCH
RATING**