

CAUTION: The DPHY-1379U pyrometer is suitable for use in Class I, Group D, Division 1 and 2 hazardous locations when installed in accordance with these instructions.

The thermocouple leads connected to this device operate at a very low voltage and power levels and **MUST NOT CONTACT** any external voltage source. Damage to the system will result from connection between the thermocouple and the ignition system or any AC or DC power source.

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.

1.0 DESCRIPTION

- 1.1 The Altronic DPHY-1379U pyrometer is an electronic instrument designed to monitor nine temperature points using industry standard type J or K thermocouples. It can be powered from a C.D. ignition system or from 12 to 48 Vdc. The DPHY-1379U 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 There are two user settable over-temperature setpoints and output switches; one for channel zero (0) and one common setpoint value and switch for channels one through eight (1-8). Both are solid state normally open switches that close to GROUND. Output switch "0" will be activated when the temperature value of channel 0 exceeds the value of setpoint "0". Output switch "1" will be activated when the temperature value of any channel from 1 to 8 exceeds the value of setpoint "1". A typical use for this instrument is to read, monitor and alarm a turbocharger inlet temperature on channel "0" and read, monitor and alarm up to eight common exhaust temperatures on the remaining channels.
- 1.3 The DPHY-1379U pyrometer is designed to be versatile and simple to use. Type J or K thermocouples and °F or °C units can be selected by the keypad. A "view alarms" function allows the user to recall and display channels which have exceeded their setpoint. An escape key is provided to permit the user to exit any setup function and return to the normal display without any changes. A programmable 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, can be recalled for easy setup.
- 1.4 For proper operation, these installation instructions must be adhered to strictly.

2.0 THERMOCOUPLES

- 2.1 The DPYH-1379U pyrometer is designed to operate with industry standard, grounded or ungrounded, type J or K thermocouples. Ungrounded thermocouples are recommended where possible. Any unused thermocouple inputs should be shunted.

3.0 MOUNTING

- 3.1 Mount the pyrometer inside a control panel or to a suitable flat surface so that the display is at a convenient viewing height. This device fits the industry standard cutout for a round 4-1/2" diameter gauge.
NOTE: Avoid mounting pyrometer with the LCD display facing direct sunlight. The display temperature range is -40°F to $+175^{\circ}\text{F}$ (-40°C to $+80^{\circ}\text{C}$).

4.0 WIRING (SEE WIRING DIAGRAMS)

- 4.1 **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.
- A. **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.
 - B. **DC POWER** - Connect the DC power input wires, plus to terminal DC+ IN and minus to terminal GND.
- 4.2 **THERMOCOUPLES AND THERMOCOUPLE EXTENSION WIRE** - Grounded or ungrounded type J or K thermocouples may be used. Use thermocouple extension wire of the same type as the thermocouple probe to connect the thermocouple to the pyrometer. 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. In addition, it is essential that the following practices be adhered to:
- A. Never run thermocouple wires in the same conduit as the ignition wiring or other high energy wiring such as AC line power.
 - B. Keep secondary wires to spark plugs and other high voltage wiring at least eight inches (200mm) away from thermocouples and extension wiring.
- 4.3 **OUTPUT SWITCH WIRING** - When the temperature of channel 0 exceeds setpoint 0, an alarm or fault condition occurs on output 0. Similarly, when any channel from 1 to 8 exceeds setpoint 1, an alarm or fault condition occurs on output 1. When an alarm or fault condition occurs, the output switch will turn ON to the GROUND terminal. The switches are rated 400 Vdc, 0.20 amp max. These switches can be wired to an Altronic annunciator system or to pilot duty relays as shown in the wiring diagrams.

- 4.4 HAZARDOUS AREA OPERATION - The DPYH-1379U pyrometer is CSA certified for CLASS I, DIVISION 2, GROUP D areas when mounted in a suitable enclosure. The device may be operated as CLASS I, DIVISION 1, GROUP D intrinsically safe, if the following conditions are met:
- A. With a CD ignition power source, the pyrometer must be powered through an Altronic 690 107 or 690 108 barrier. With a DC power source, the pyrometer must be powered through a CSA-certified zener barrier rated 30 volts max., 120 ohms min. A suitable barrier is a Stahl part no. 9001/01-280-165-10; follow the installation instructions supplied with the barrier.
 - B. The switch outputs, if used, 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):
 - 1. 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.
 - 2. Wiring to the sensors must have a grade of insulation capable of withstanding an AC voltage of 500 volts RMS.
 - 3. 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.

<p>WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY AND/OR SUITABILITY FOR CLASS I, DIV. 2, GROUP D.</p> <p>DO NOT DISCONNECT EQUIPMENT IN DIV. 2 ENVIRONMENT UNLESS POWER IS SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.</p>

- 4.5 TESTING THERMOCOUPLE LEADS - If it becomes necessary to check thermocouple to terminal strip wiring with an ohmmeter or other checker, first unplug the thermocouple connectors from the pyrometer. This will prevent possible damage to the device's sensitive low voltage detection circuitry.

5.0 NORMAL OPERATION

- 5.1 When the DPYH-1379U gauge is in the "normal" mode, it displays the channel number, numeric temperature value and either °F or °C. The digit to the left of the colon indicates the displayed channel. The number to the right of the colon indicates the temperature associated with that particular channel. When any channel's measured temperature value exceeds its setpoint value, an LCD indicator "AL" (for alarm) will display.
- 5.2 If a monitored thermocouple temperature falls below the minimum range of the instrument (-76°F or -60°C), the display will read "X: LO" to identify this condition. If the thermocouple temperature exceeds the maximum range of the instrument (1382°F or 750°C for type J, 1472°F or 800°C for type K) the display will read "X: HI". "X" represents the associated channel number.

NOTE: If a thermocouple or its wiring becomes open or disconnected from the pyrometer, the display will read "X: HI" and its output switch will turn on. All unused thermocouple inputs must be shunted to prevent this condition in normal operation.

6.0 KEYPAD DESCRIPTION

- 6.1 The DPYH-1379U 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 VIEW ALARMS, SETUP, CHANNEL, ENTER, SETPTS, ESC, and ▲, ▼ (up and down arrow keys). Only one key should be pressed at a time.
- 6.2 VIEW ALARMS -The VIEW ALARMS key allows the user to display past channels which have exceeded their setpoints. This is helpful in determining which thermocouple is responsible for shutting down the engine. This is stored in non-volatile memory allowing the pyrometer to power down and still retain the information. Pressing VIEW ALARMS scrolls through the channels in which the measured temperature has exceeded the setpoint values. Any channel that has not exceeded its setpoint value will not be displayed. After displaying all channels that have exceeded their setpoints, the display will show "CLr", asking the user if these points should be cleared. At this point, pressing ENTER clears any faults which are not currently exceeding their setpoints. Pressing the escape key results in the past alarms in memory from clearing.
NOTE: This function has no effect on the output switches. The "AL" indicator will stay on in this menu and does not necessarily indicate a fault condition is occurring.
- 6.3 SETUP - The SETUP key is used to scroll through the pyrometer setup menu.
- 6.4 CHANNEL - This key allows the user to increment the displayed channel and corresponding temperature value. Each press of the channel key increments the channel and corresponding temperature value one at a time through channel 8, then back to channel 0.
- 6.5 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.
- 6.6 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 "0". Refer to section 9.0 for more information. NOTE: The setpoints cannot be changed if the protection is set to "On".
- 6.7 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, any changed values are ignored (not stored in memory), the configuration returns to the previous values and the display returns to the normal reading.
- 6.8 ▲ ▼ - 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 and the filter screen.

7.0 DEFAULT FACTORY SETTINGS

- 7.1 The DPYH-1379U pyrometer contains two default settings that are available to the user anytime during the life of the instrument. Upon receipt, the pyrometer is set to one of these settings. These default settings will provide factory calibration for both type J and K thermocouples.
- 7.2 **SELECTING A DEFAULT SETTING** - From the normal mode, press the SETUP key until the display reads either "J:tc" or "K:tc". Use the ▲ and ▼ keys to select either a type J or K thermocouple and press ENTER. All of the configuration parameters as well as the calibration values will automatically be reset to the factory settings for that thermocouple type.
- 7.3 **DEFAULT SETTINGS** - Listed below are the factory default settings stored in permanent memory.

AUTO SCAN:	No (Auto scan is off.)
PROTECTION STATUS:	Protection is off. (Allow setpoints to be changed.)
DISPLAY FILTER:	The filter control is set for 230 out of 255, which provides a moderate amount of dampening.
SETPOINT CONFIGURATION:	SETPOINT 0 - 1000 °F SETPOINT 1 - 900 °F

8.0 INITIAL OPERATION

- 8.1 This section allows for quick setup and installation of the DPYH-1379U pyrometer. Mount and wire the gauge as described in sections 3.0 and 4.0. Upon initial power up, press the SETUP key until the display reads either "J:tc" or "K:tc". Press the ▲ or ▼ (up or down arrow keys) to view the thermocouple options. Press ENTER when the appropriate thermocouple type is displayed to load the default data for that type. This procedure loads the factory default calibration parameters and no additional calibration should be required. Next, press the SETUP key until the display reads "dEG °F" or "dEG °C", press the ▲ or ▼ (up or down arrow keys) to scroll and press ENTER to accept the desired units choice. The device is now ready to accurately read temperatures.

9.0 SETPOINTS

- 9.1 There are two individually adjustable high setpoints which can be set anywhere within the range of the gauge. To view or change the setpoint values, press the SETPTS key one time to view setpoint 0; press it again to view setpoint 1. The number to the left of the colon represents the setpoint channel being viewed. The number to the right of the colon is the numeric high setpoint value for that setpoint. To adjust the displayed value, press the ▲ or ▼ (up/down arrow keys) to increase or decrease the value until the desired high trip-point for that switch is reached. Press ENTER to accept and save the new value. The new setpoint value will change only if the ENTER key is pressed. Press the ESC key to return to the normal display mode with no setpoint value change.

NOTE: When in the setpoints mode, the previous setpoint values are monitored, and the new value is monitored only after the ENTER key is pressed. If no key is pressed for 15 seconds, the display will return to the normal mode and the configuration will revert back to the previous parameters.

- 9.2 OUTPUT SWITCHES - The output switches are normally open, solid state switches rated 400 Vdc, 0.20 amps max. Each output switch will close or make an electrical connection to GROUND, within one second (see note below) if the input temperature for that particular channel is equal to or greater than the user selected high setpoint value for that channel. The output will not clear until the temperature is less than or equal to the setpoint value minus 10°F (or 5°C). For example, if setpoint 0 is set to 1000°F, output 0 will trip when the monitored temperature on channel 0 reaches 1000°F or greater and will not clear until the input temperature is less than or equal to 990°F. This hysteresis feature prevents the outputs from rapidly turning on and off near the threshold.

NOTE: The output switch reaction time is tied to the filter value with one second being the minimum. For other reaction times see section 10.7 below.

10.0 GAUGE CONFIGURATION

- 10.1 The following are the configuration headings of the pyrometer. Press the SETUP key to reach any of these configuration headings from the normal display mode. After a selection has been made, press the ENTER key; the display will read "SAVE/donE". It is at this time the new data is saved. The ESC (escape) key can be used at any time to abort the configuration mode and return to the normal reading. During configuration, the gauge allows 15 seconds for first level and 60 seconds for other levels between keystrokes to change or save a new configuration. If the time lapses without a keystroke, the gauge will automatically return to the normal mode without making any changes. The new information is saved only if the ENTER key is pressed and the gauge reads "SAVE/donE". A flowchart is provided that shows step-by-step progression through the gauge configuration procedure.

10.2 "dEG °F / dEG °C" UNITS - The available temperature units are °F and °C. The indicators appear on the right side of the display. When changing temperature units, the displayed temperature is automatically converted to the new unit value. To change the unit indicator, press the SETUP key until the display reads either "dEG °F" or "dEG °C". The previously programmed unit indicator will appear. Use the ▲ or ▼ arrow keys to select one of the available units, and press ENTER to accept and save the change. The display will read "SAVE/donE" and return to the normal mode displaying the new units selected and the numeric value converted to the selected units.

10.3 "J:tc / K:tc" THERMOCOUPLE TYPE - The instrument can read either type J or K thermocouples. Use the ▲ or ▼ arrow keys to select a thermocouple type and press ENTER to accept and save the new thermocouple type.

NOTE: Pressing ENTER will return all of the adjustable parameters, including the setpoint switch values, to factory default values. When verifying the type, press ESC to exit without reloading the default values. All thermocouple inputs must be either type J or K; the inputs cannot be mixed.

10.4 "CAL" CALIBRATION - For calibration procedures, see Section 11.0.

10.5 "SCAN" - The SCAN function allows the user to select either auto or manual display scan. If SCAN is set to "YES" (auto scan ON), the pyrometer first displays channel 0 and increments through the other channels in numerical order at the rate of approximately two seconds per channel, and then continuously repeats the process. If SCAN is set to "NO" (auto scan OFF or manual scan), the pyrometer first displays channel 0 and can be incremented manually to the other channels using the CHANNELS button.

10.6 "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 any of them. If the ▲ or ▼ 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.

10.7 "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 less for large values. The filter value is read-out 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 new reading. To set the filter value press the SETUP key until the display reads "FILt" and press ENTER. The display will read the previously set filter value. Use the ▲ or ▼ arrow keys to increase or decrease the filter value and press ENTER to save the new filter value.

FILTER VALUE	1	128	200	210	220	230	240	250	253	255
SETTLING, SEC.	1.0	2.5	5.0	6.0	8.0	10	14	37	75	204

11.0 CALIBRATION

- 11.1 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 gauge. The calibration mode is used to calibrate the zero and span values of the gauge. Calibration can be performed from the front keypad without disassembling the gauge. A thermocouple calibrator or simulator is required to provide a calibration reference.

NOTE: During calibration, the gauge allows 60 seconds between keystrokes to change or save a new calibration. If 60 seconds lapse without a keystroke, the gauge 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".

- 11.2 CALIBRATION PROCEDURE - Connect the proper thermocouple simulator, either type J or K using proper thermocouple extension wire, to the pyrometer thermocouple input channel 0. The DPYH-1379U pyrometer MUST be calibrated on channel 0 only. The calibration performed on channel 0 applies to all channels. To calibrate the pyrometer, press the SETUP key until the display reads "CAL" and press ENTER. The display will read "1:CAL". Adjust the simulator for a very low reading (0° F.) and press ENTER. 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". Adjust the simulator for a very high reading (1000°F) and press ENTER. Again 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. NOTE: Be sure that the units (°C or °F) of the calibrator match the units of the instrument before performing a calibration.

- 11.3 The DPYH-1379U 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 0. NOTE: This type of adjustment will invalidate calibration settings resulting from the procedures in section 11.2.

- A. ZERO ADJUSTMENT ONLY - To make a small adjustment on the zero calibration value of the pyrometer, enter the calibration mode by pressing the SETUP key until the display reads "CAL" and press ENTER; the display will read "1:CAL". 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"; 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.
- B. SPAN ADJUSTMENT ONLY - To make a small adjustment on the span point of the pyrometer, enter the calibration mode by pressing the SETUP key until the display reads "CAL" and press ENTER; the display will read "1:CAL". Press the SETUP key and the display will read "2:CAL". 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:

MOUNTING DIMENSIONS AND SPECIFICATIONS

DPYH-1379U CONFIGURATION WORKSHEET

DPYH-1379U FLOWCHART

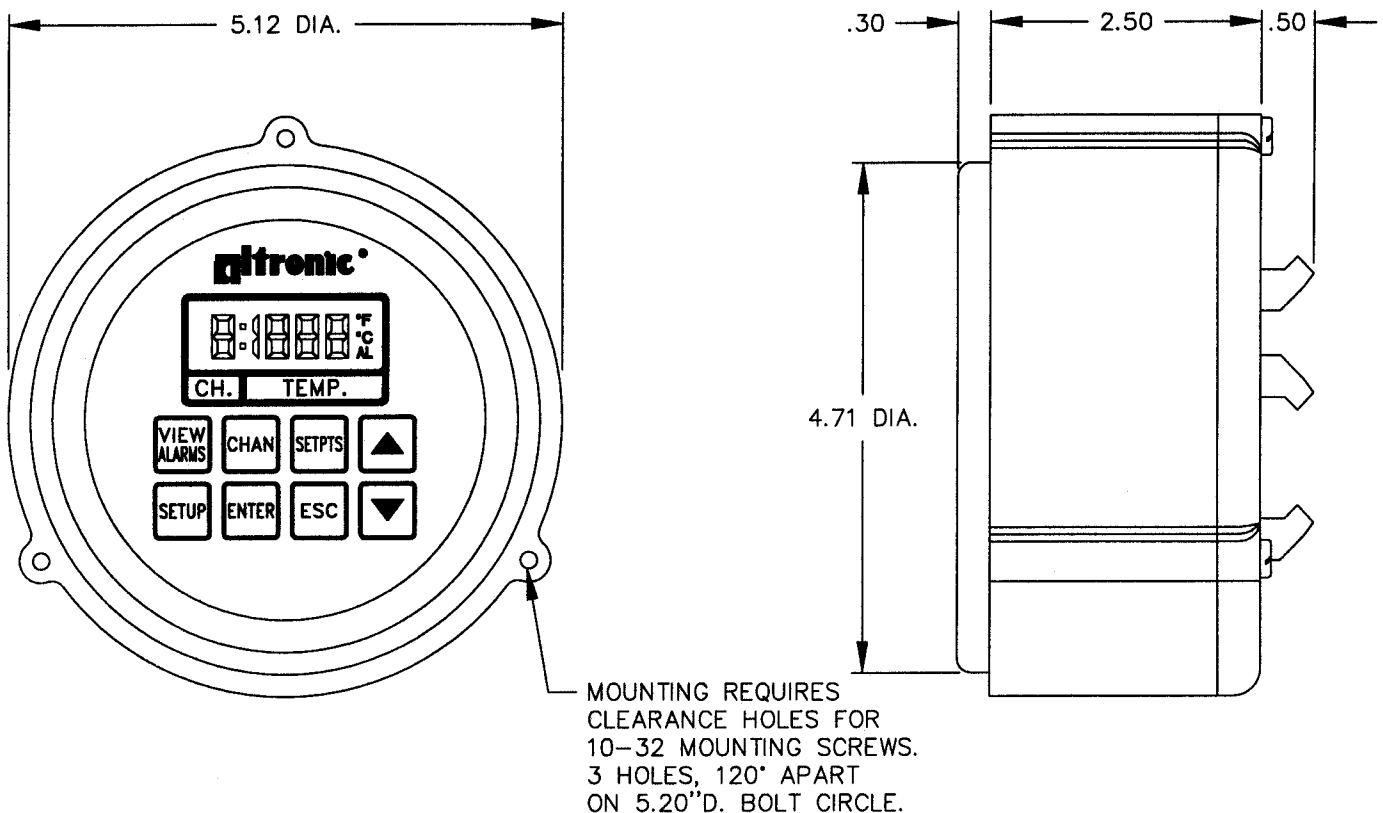
GENERAL WIRING DIAGRAM

WIRING DIAGRAM - ALTRONIC ANNUNCIATOR SYSTEMS

WIRING DIAGRAM - DC RELAY

WIRING DIAGRAM - MURPHY TATTLETALE (IGNITION POWERED)

MOUNTING DIMENSIONS AND SPECIFICATIONS



SPECIFICATIONS:

POWER REQUIRED: C.D. IGNITION POWERED 100–400V OR DC POWERED 12–48 VDC 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 DISPLAY INDICATORS.

DISPLAY UPDATE RATE: 2.25 SECONDS NOMINAL.

SCAN RATE: 1.5 SECONDS FOR 9 CHANNELS NOMINAL.

RANGE: TYPE "J" THERMOCOUPLE –60° TO 750°C OR –76° TO 1382°F.
TYPE "K" THERMOCOUPLE –60° TO 800°C OR –76° TO 1472°F.

OUTPUT SWITCH: INDIVIDUAL SWITCH CHANNEL 0, COMMON SWITCH CHANNELS 1–8.
RATED 400 VDC 0.2 AMP CONTINUOUS. HYSTERESIS FIXED AT 10°F.

SWITCH RESPONSE TIME: TIED TO FILTER VALUE AND DISPLAY READING (WITH FILTER AT 1
MAX RESPONSE TIME IS APPROXIMATELY ONE SECOND).

AMBIENT TEMPERATURE RANGE: –40° TO 80°C (–40° TO 175°F).

INSTRUMENT ACCURACY: ±1%, ±3 DEGREE EXCLUSIVE OF THERMOCOUPLE ERROR.

HAZARDOUS AREA CLASSIFICATION: CLASS I, GROUP D, DIV. 2
CLASS I, GROUP D, DIV. 1 WHEN IGNITION POWERED
FROM THE ALTRONIC 690 107 OR 690 108 BARRIER
OR WHEN DC POWERED FROM A CSA CERTIFIED ZENER
BARRIER RATED 30 VOLTS MAX., 120Ω MIN.

DPYH-1379U - CONFIGURATION WORKSHEET

SITE: _____

SERIAL# _____

UNIT ___ °F
 ___ °C

TC TYPE ___ "J" THERMOCOUPLE (iron-constantan)
 ___ "K" THERMOCOUPLE (chromel-alumel)

SCAN ___ "NO" (MANUAL SCAN) ___ "YES" (AUTO SCAN)

SETPOINT PROTECTION ___ ON ___ OFF

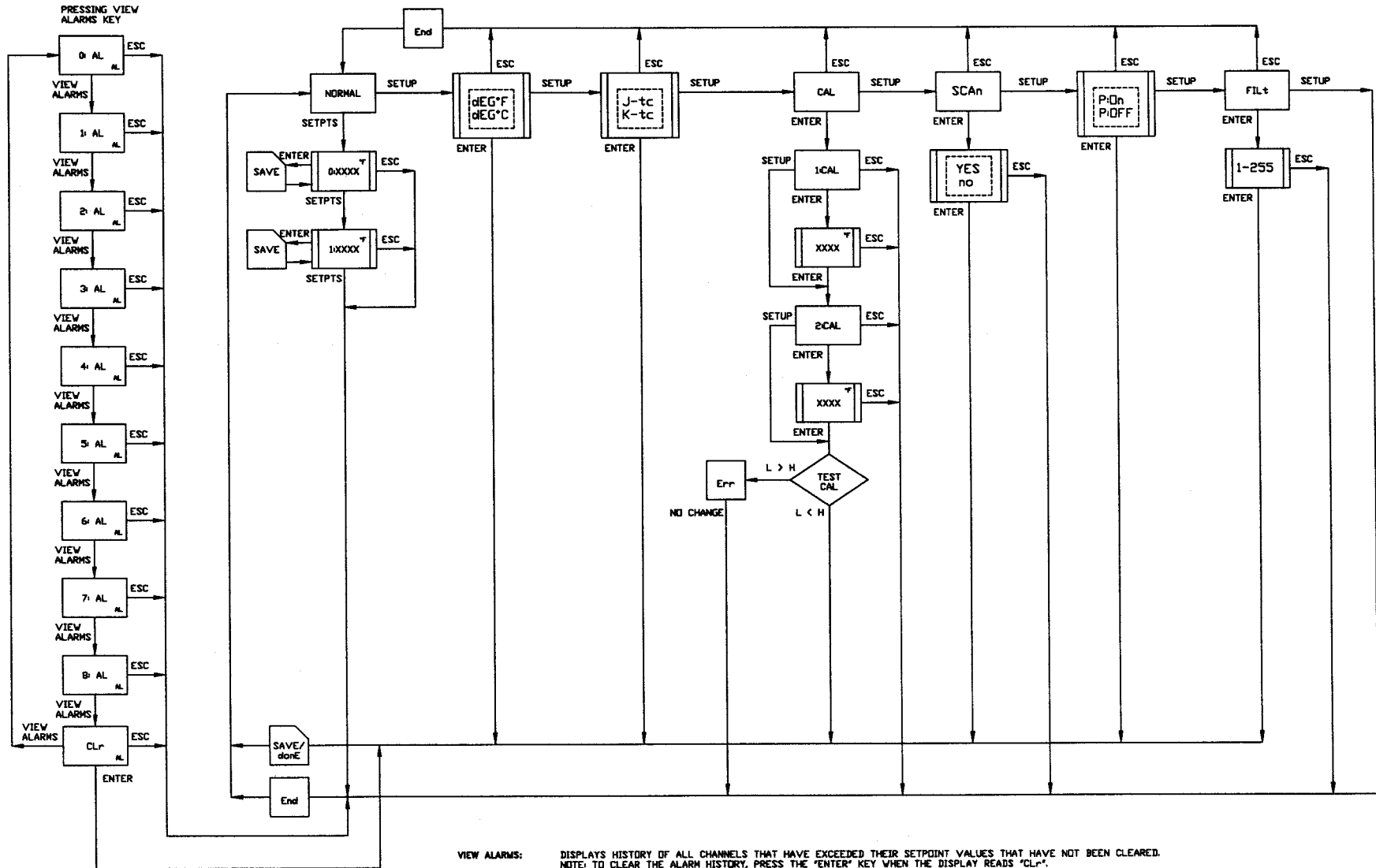
FILT _____ (1=min filtering, 255=max filtering, default = 230)

SETPOINTS

#0 _____ (in °F or °C)

#1 _____ (in °F or °C)

DPYH-1379U - FLOWCHART



VIEW ALARMS: DISPLAYS HISTORY OF ALL CHANNELS THAT HAVE EXCEEDED THEIR SETPOINT VALUES THAT HAVE NOT BEEN CLEARED.
 NOTE: TO CLEAR THE ALARM HISTORY, PRESS THE 'ENTER' KEY WHEN THE DISPLAY READS 'CLr'.
 IF THERE IS NO ALARM HISTORY TO VIEW, THE DISPLAY WILL READ 'CLr' AND RETURN TO THE NORMAL READING.

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 NO KEY IS PRESSED. IF THE UP OR DOWN ARROW KEY IS PRESSED THE SETPOINT VALUE WILL INCREMENT OR DECREMENT AND REFRESH THE TIMER. PRESSED THE ENTER KEY SAVES THE NEW VALUE AND DISPLAYS THE SAME SETPOINT. PRESSED THE SETPOINTS 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

FOR FACTORY
 DEFAULT SETTINGS
 SELECT 'J' OR 'K'
 THERMOCOUPLE TYPE

J OR K THERMOCOUPLE
 °F OR °C UNITS
 MANUAL SCAN
 SETPOINT PROTECTION OFF
 FILTER: 230

SETPOINTS: 0: 1000
 IN DEG. F 1: 900

FLOWCHART KEY

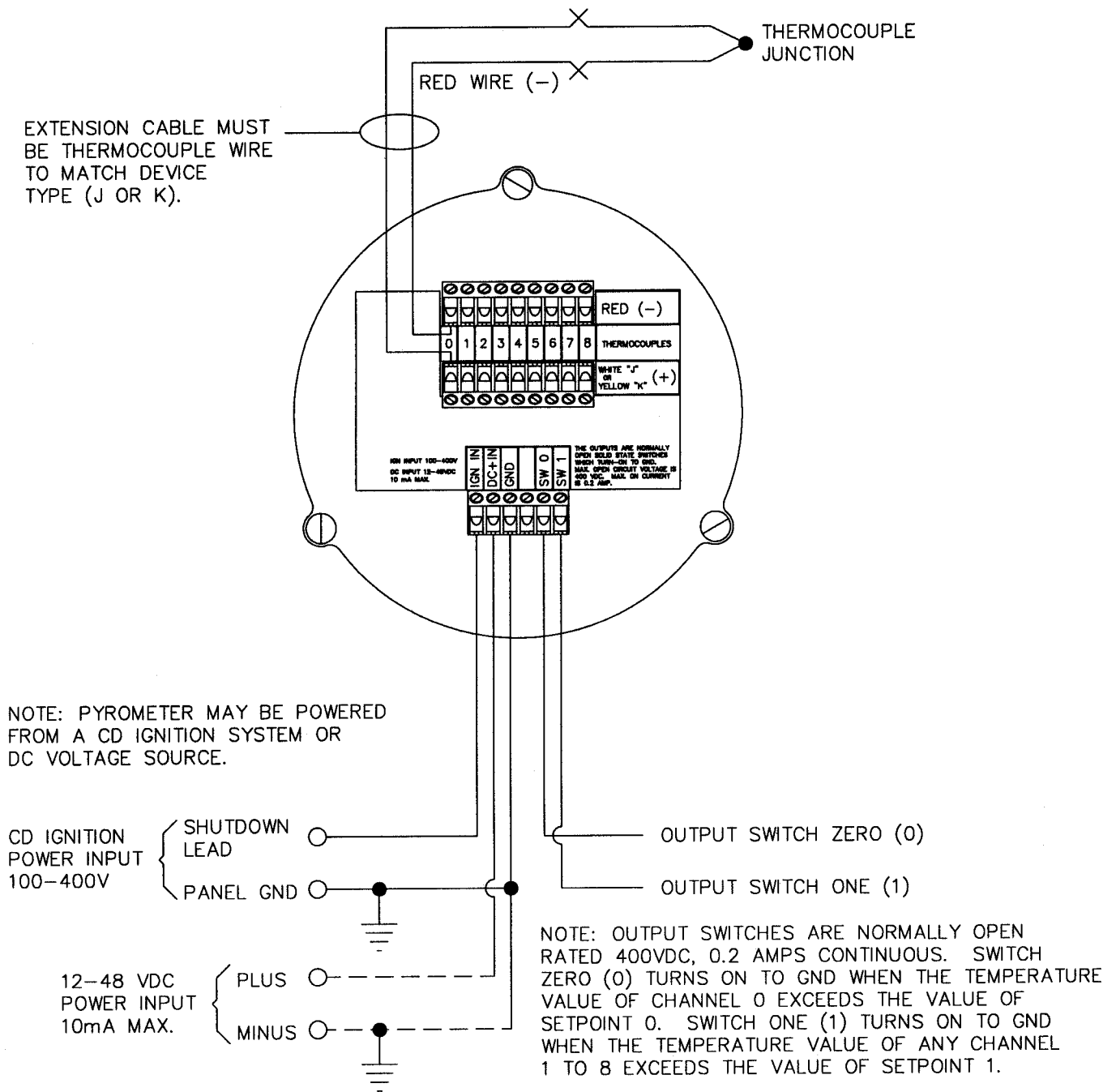
XXXX ▽ Δ DOUBLE BARS-
 USE UP AND
 DOWN ARROW
 KEYS TO SCROLL

0EG°F
 0EG°C DASHED
 LINES-
 MAKE
 SELECTION

SCAN
 YES = AUTO SCAN
 NO = MANUAL SCAN

PIOFF = SETPOINTS ARE
 CHANGEABLE.
 PIOn = SETPOINTS ARE NOT
 CHANGEABLE.

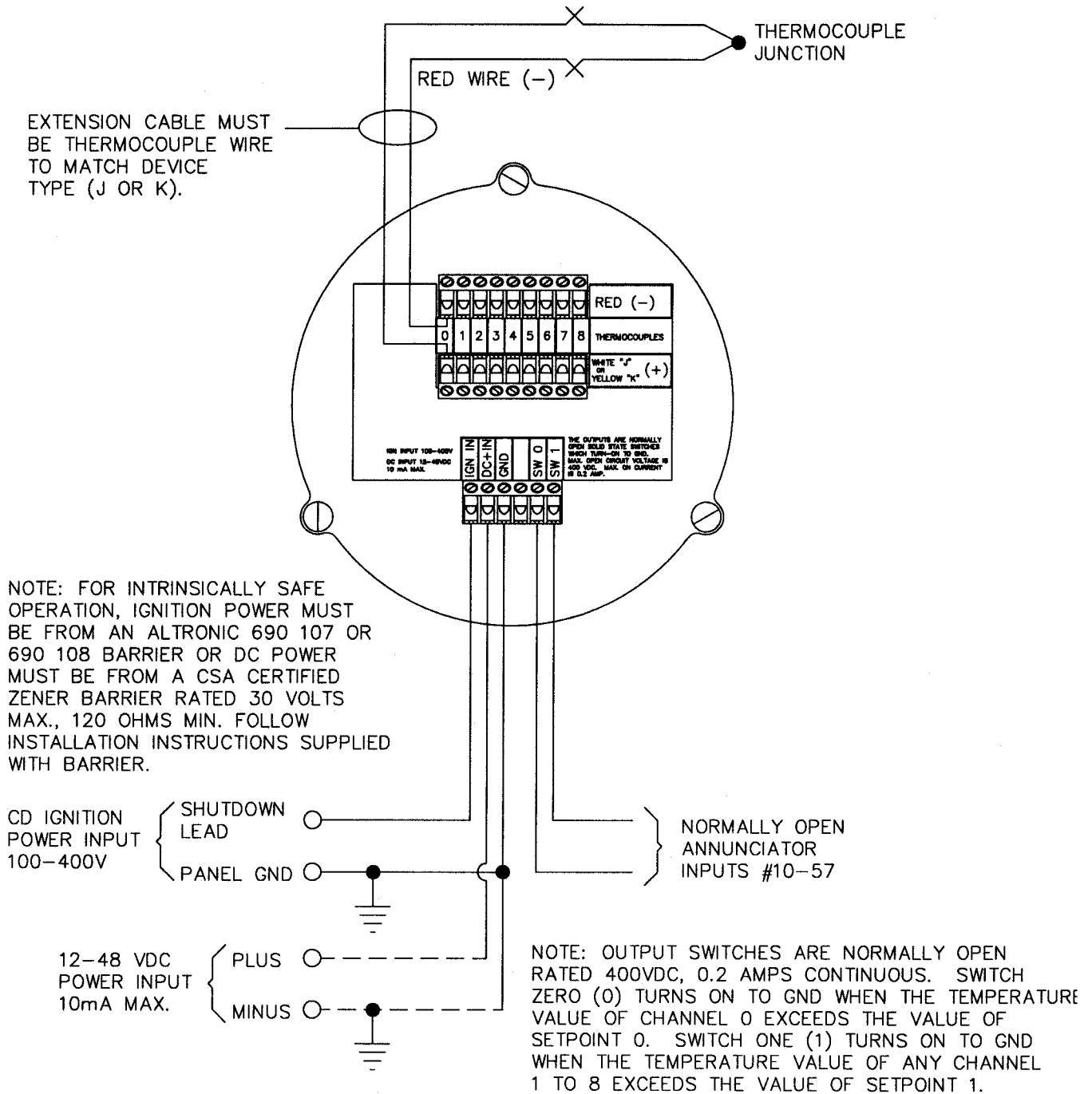
GENERAL WIRING DIAGRAM



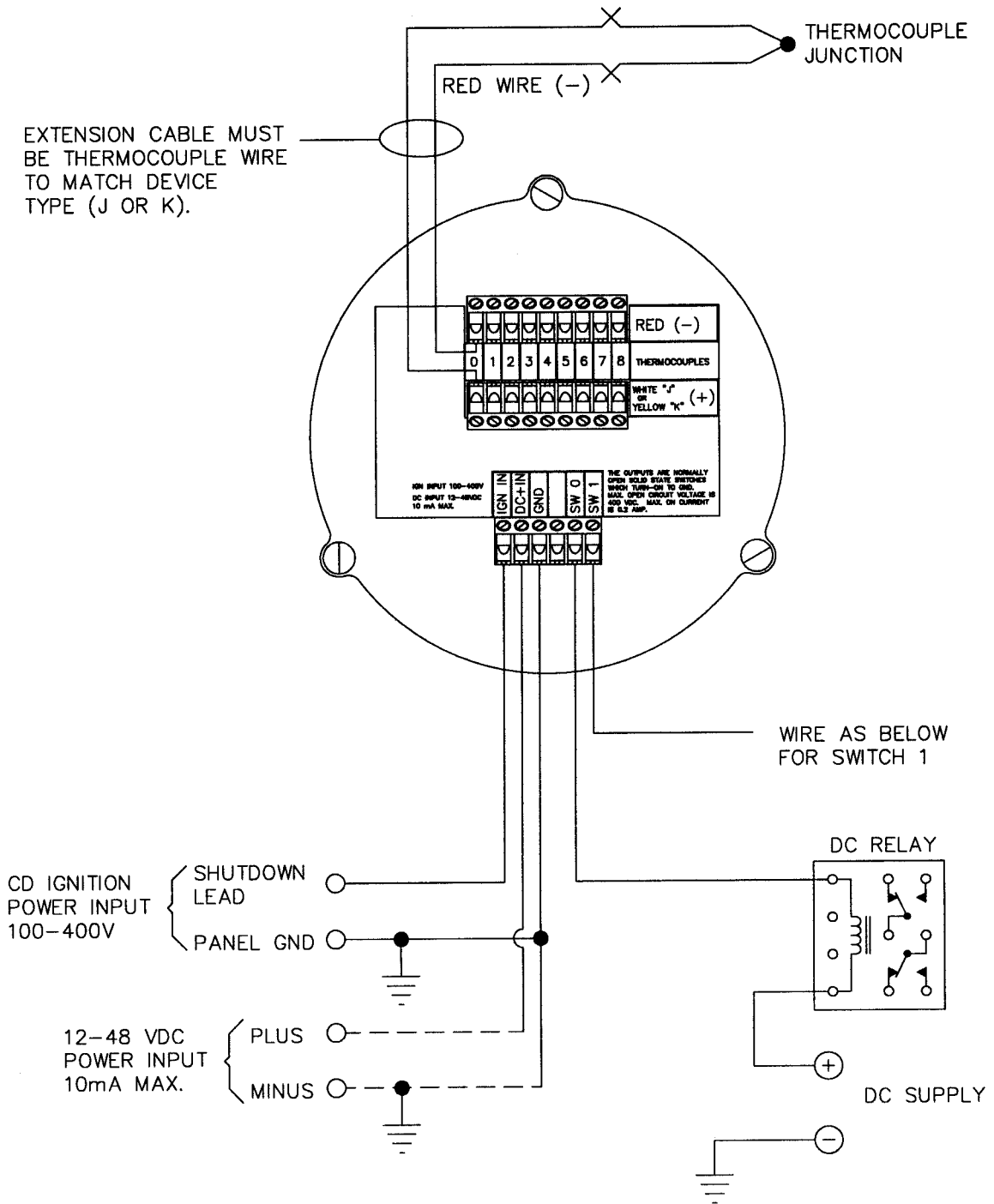
NOTES:

1. ALWAYS USE POINT (0) 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. FOR INTRINSICALLY SAFE OPERATION, POWER FROM ALTRONIC 690 107/108 BARRIER FOR IGNITION POWER OR FROM A CSA CERTIFIED ZENER BARRIER RATED 30V MAX., 120Ω MIN. FOR DC POWER.

WIRING DIAGRAM ALTRONIC ANNUNCIATOR SYSTEMS

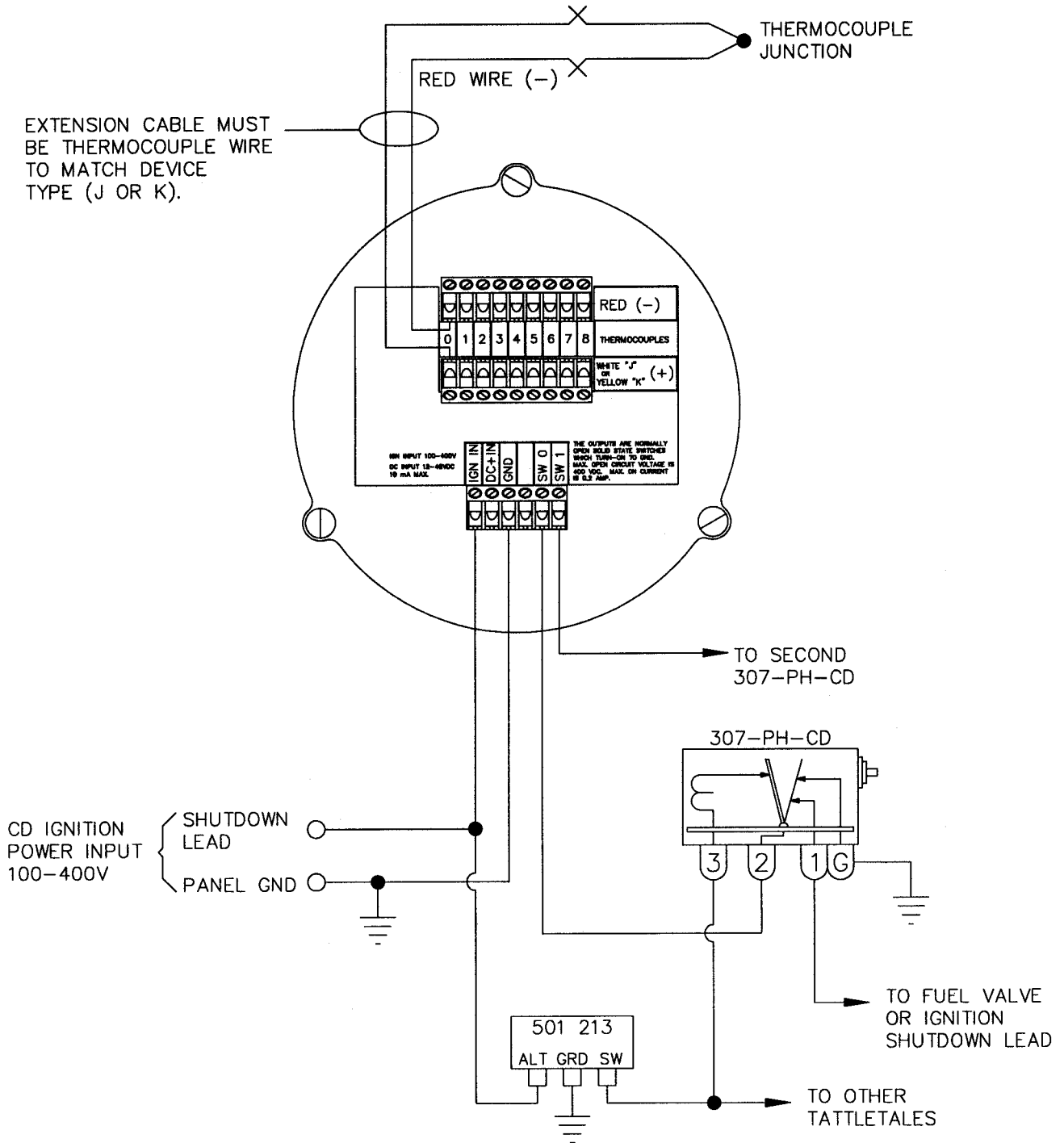


WIRING DIAGRAM - DC RELAY



NOTE: OUTPUT SWITCHES ARE NORMALLY OPEN RATED 400VDC, 0.2 AMPS CONTINUOUS.

WIRING DIAGRAM – MURPHY TATTLETALE (IGNITION POWERED)



NOTE: OUTPUT SWITCHES ARE NORMALLY OPEN
RATED 400VDC, 0.2 AMPS CONTINUOUS.