CAUTION: The DPYH-4390U pyrometers are 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 DPYH-4390U pyrometers are electronic instruments designed to monitor temperatures using industry standard type J or K thermocouples. The DPYH-4394U/4396U/4398U devices can monitor and alarm up to 4/6/8 different high temperature points. These pyrometers use a microcontroller to process the input signal and a nonvolatile 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 Each temperature point is continuously compared against its individual user-settable high setpoint. When the temperature on a point has reached its high setpoint value, a solid state normally open output switch closes to the switch common. All setpoint switch changes are performed through the keypad.

1.3 The DPYH-4390U pyrometers are designed to be versatile and simple to use. Type J or K thermocouples and °F or °C units can be selected via the keypad. Either automatic or manual scan functions can be selected. An escape key is provided to permit the user to exit any setup function and return to the normal display. 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 The DPYH-4390U pyrometers can be powered from a C.D. ignition system or from a DC source. The DC requirement is 12 to 48 Vdc, 10 mA max.

1.5 For proper operation, these installation instructions must be adhered to strictly.

2.0 THERMOCOUPLES

2.1 The DPYH-4390U pyrometers are designed to operate with industry standard, grounded or ungrounded, type J or K thermocouples. Ungrounded thermocouples are recommended where possible.

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. A drilling template is provided. NOTE: Avoid mounting pyrometer with the LCD display facing direct sunlight. The display temperature range is -40°F to +175°F (-40°C to +80°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 with 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 - An alarm or fault condition occurs when the temperature of a point reaches or exceeds the high setpoint value of that point. This will cause the output switch associated with that channel to turn ON to the switch common terminal. These switches are normally open solid state switches and are isolated from the ground terminal. The switches are rated 50 Vdc, 0.1 amp max. on models DPYH-4396U/4398U and 400 Vdc, 0.15 amp max. on model DPYH-4394U. These switches can be wired to an Altronic annunciator system or to pilot duty relays as shown in the wiring diagrams.

NOTE: If the switch common (terminal COM) is wired isolated from (not the same potential as) the instrument power supply ground, the use of ungrounded thermocouples is required.

4.4 HAZARDOUS AREA OPERATION - The DPYH-4390U pyrometers are 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 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. 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.

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

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

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-4390U device 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.

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-4390U 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 SCAN AUTO/MANUAL, SETUP, CHANNEL, ENTER, SETPTS, ESC, and ▲, ▼ (up and down arrow keys). Only one key should be pressed at a time.

6.2 SCAN AUTO/MANUAL - The SCAN AUTO/MANUAL key allows the user to display automatically or manually the selected number of points. The scan starts with channel 1 and progresses in numerical order to the last channel selected in setup and then repeats the sequence. This avoids scanning unused channels. In manual scan the device continually displays the temperature value of one channel at a time. The next channel and corresponding temperature value is displayed with each press of the CHANNEL button. In auto scan the device will display each channel number and temperature value of the selected number of channels for approximately two seconds before automatically switching to the next channel.

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 channel and corresponding temperature value on the LCD display in either auto or manual scan mode. After the maximum selected channel is displayed, the display will return to channel 1.

6.5 ENTER - The ENTER key is used to save new data or a new configuration in nonvolatile 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 1. 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 during the setup or setpoint mode 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, number of points and the filter screen.

7.0 DEFAULT FACTORY SETTINGS

7.1 The DPYH-4390U series pyrometers contain 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.

UNITS:	Degrees F (°F) or Degrees C (°C)
NUMBER OF POINTS:	4 for the DPYH-4394U 6 for the DPYH-4396U 8 for the DPYH-4398U
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:	1000 °F on all channels

8.0 INITIAL OPERATION

8.1 This section allows for quick setup and installation of the DPYH-4390U series pyrometer. Mount and wire the unit 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 either "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 Each channel has its own individually adjustable high setpoint. These can be set to any value within the range of the device. To view or change the setpoint values, press the SETPTS key one time to view the first setpoint; press it again to view the second setpoint, and so on. 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 point. 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. Each output switch will close or make an electrical connection to switch common, which must be MINUS, 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 3 is set to 900°F, output 3 will trip when the monitored temperature on channel three reaches 900°F or greater and will not clear until the input temperature is less than or equal to 890°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 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 unit 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 device 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 display reads "SAVE/donE". A flowchart is provided that shows step-by-step progression through the 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 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 "X:PtS" NUMBER OF POINTS - This allows the user to select the number of channels to be monitored. The user can select from 1 to the maximum number of points (4, 6 or 8) in the device. Default will select the maximum amount of points. Any points not selected will cause the outputs associated with them to be in their open or not active state. NOTE: Point 1 is always used, and the rest of the points used are in numeric order starting from point 1.

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	1.5	3.5	4.5	5.5	7.5	11.5	30	60	180

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

NOTE: During calibration, the unit 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 display reads "SAVE/donE".

11.2 CALIBRATION PROCEDURE - Connect the proper thermocouple simulator, either type J or K using proper thermocouple extension wire, to pyrometer thermocouple input channel 1. The DPYH-4390U pyrometer MUST be calibrated on channel 1 only. The calibration performed on channel 1 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 (°F or °C) of the calibrator match the units of the instrument before performing a calibration.

11.3 The DPYH-4390U 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 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 zero, 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-4390U series CONFIGURATION WORKSHEET

DPYH-4394U series FLOWCHART

DPYH-4396U/ DPYH-4398U series FLOWCHART

GENERAL ELECTRICAL CONNECTIONS DPYH-4394U

GENERAL ELECTRICAL CONNECTIONS DPYH-4390U

WIRING DIAGRAM - ALTRONIC ANNUNCIATOR SYSTEMS DPYH-4394U

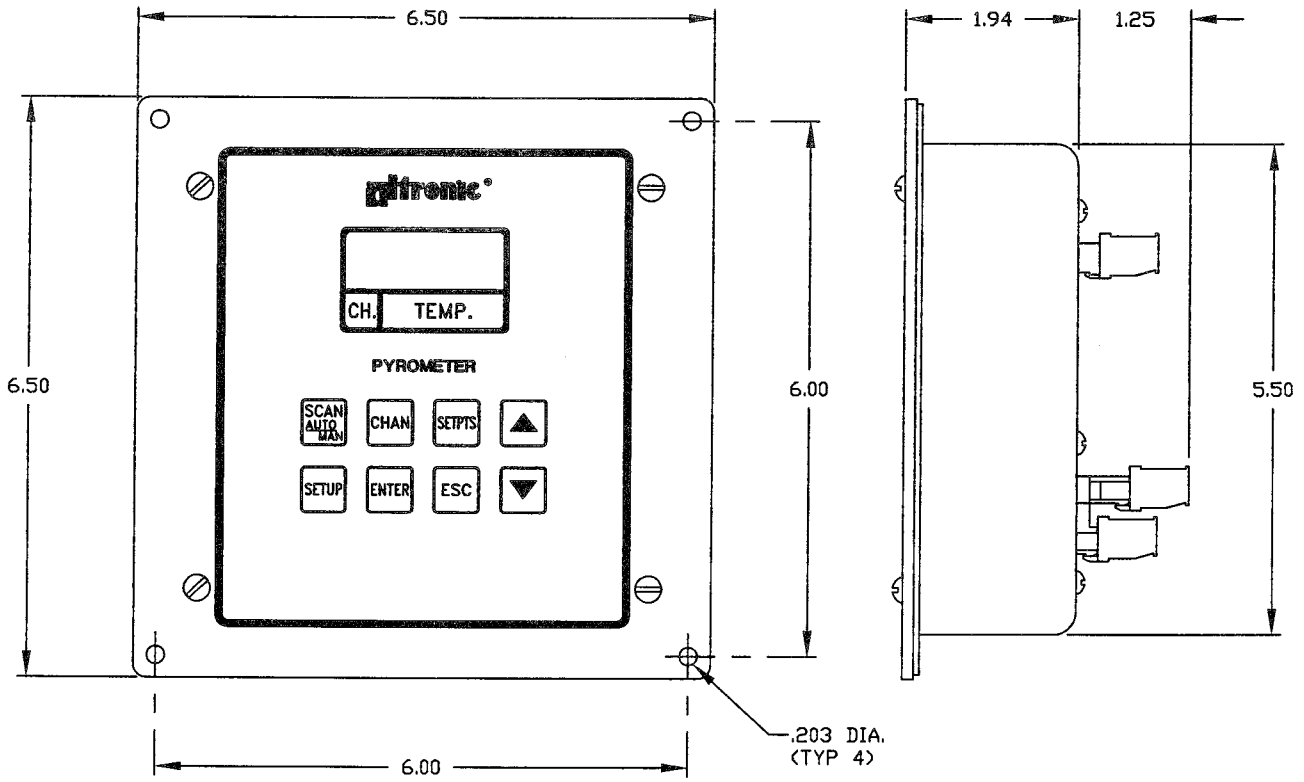
WIRING DIAGRAM - ALTRONIC ANNUNCIATOR SYSTEMS DPYH-4390U

WIRING DIAGRAM - DC RELAYS DPYH-4394U

WIRING DIAGRAM - DC RELAYS DPYH-4390U

WIRING DIAGRAM - MURPHY TATTLETALE OR PNEUMATIC VALVE

MOUNTING DIMENSIONS AND SPECIFICATIONS



SPECIFICATIONS:

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

THERMOCOUPLE TYPE: "J" (IRON-CONSTANTAN) OR "K" (CHROMEL-ALUMEL).

TEMPERATURE SCALE: PROGRAMMABLE °F OR °C.

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

DISPLAY UPDATE RATE: 2.25 SECONDS NOMINAL.

SCAN RATE: 2.25 SECONDS PER CHANNEL (18 SECONDS FOR 8 CHANNELS 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: FOUR, SIX, OR EIGHT INDIVIDUAL N/O HIGH ALARM SOLID STATE SWITCHES RATED 400 VDC 0.15 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 175°F (-40° TO +80°C)

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

HAZARDOUS AREA CLASSIFICATION: CLASS I, GROUP D, DIV. 2
CLASS I, GROUP D, DIV. I 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-4390U - CONFIGURATION WORKSHEET

SITE:_____

MODEL# __DPYH-4394U **SERIAL#** _____
MODEL# __DPYH-4396U
MODEL# __DPYH-4398U

UNIT __ °F
__ °C

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

X:PTS _____ POINTS MONITORED

SETPOINT PROTECTION __ ON __ OFF

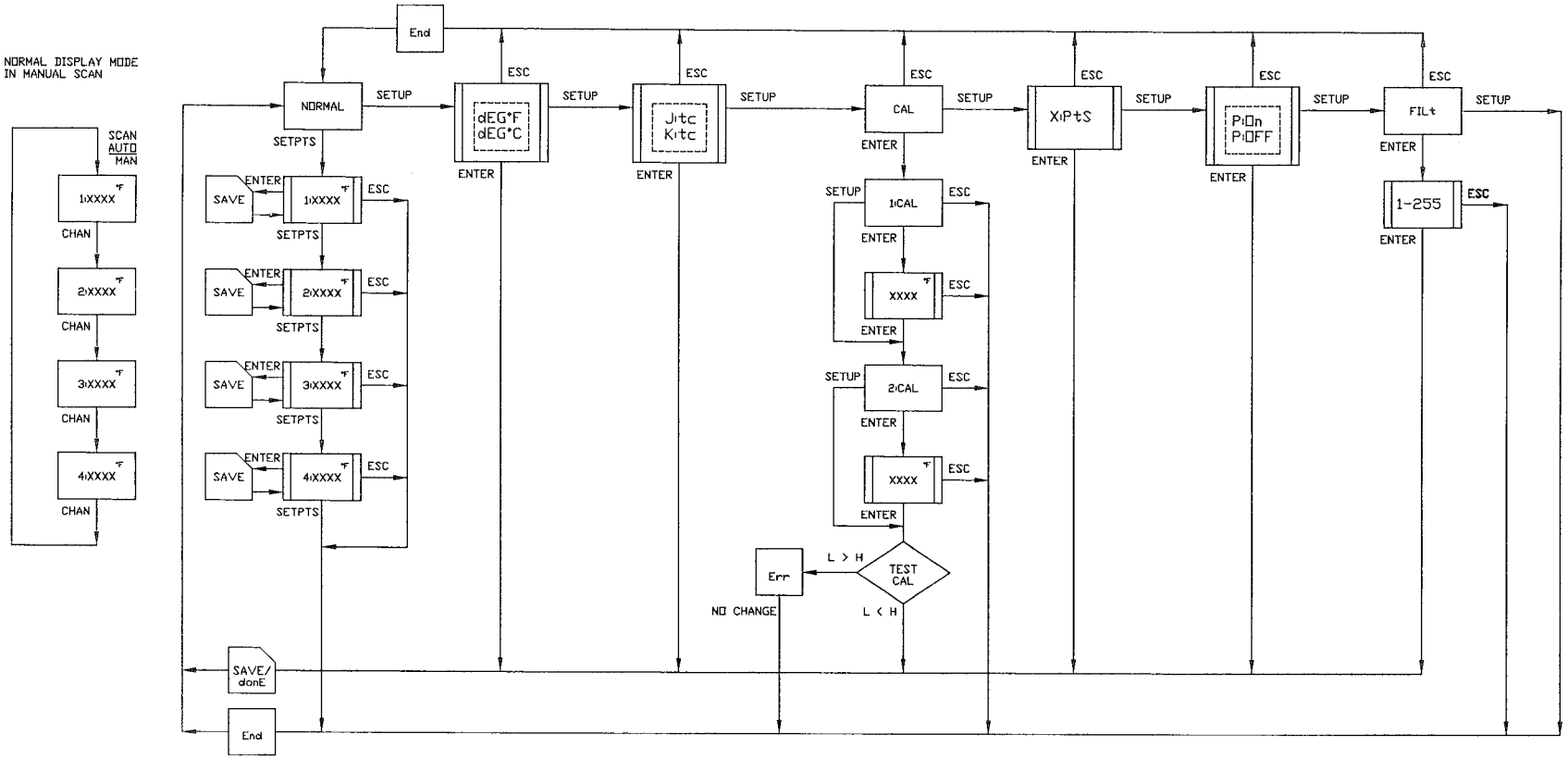
FILT _____ (1=min filtering, 255=max filtering, default = 230)

SETPOINTS

#1 _____ (in °F or °C)
#2 _____ (in °F or °C)
#3 _____ (in °F or °C)
#4 _____ (in °F or °C)
#5 _____ (in °F or °C)
#6 _____ (in °F or °C)
#7 _____ (in °F or °C)
#8 _____ (in °F or °C)

NOTE:
4394 = 4 SETPOINTS
4396 = 6 SETPOINTS
4398 = 8 SETPOINTS

DPYH-4394U – FLOWCHART



SCAN AUTO/MAN: AUTO – DISPLAYS EACH CHANNEL NUMBER AND CORRESPONDING TEMPERATURE FOR APPROXIMATELY 2.25 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 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. PRESSING THE ENTER KEY SAVES THE NEW VALUE AND DISPLAYS THE SAME SETPOINT. PRESSING 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
4 POINTS
SETPOINT PROTECTION OFF
FILTER: 230

SETPOINTS: 1000 IN DEG. F

FLOWCHART KEY

XXXX °F — △ DOUBLE BARS– USE UP AND ▽ DOWN ARROW KEYS TO SCROLL

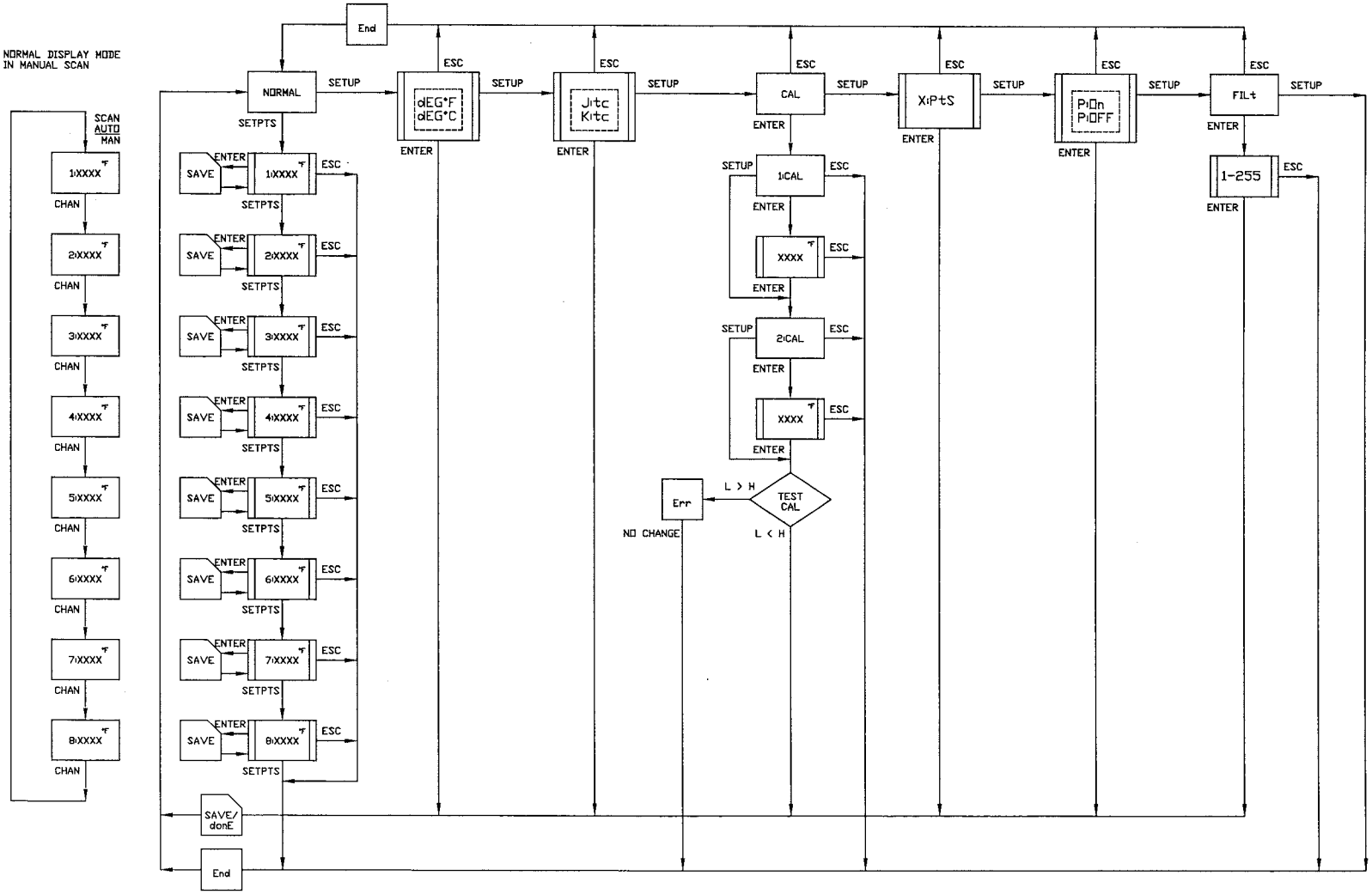
dEG°F / dEG°C — DASHED LINES– MAKE SELECTION

XiPtS = MAXIMUM NUMBER OF POINTS DISPLAYED IN SCAN CYCLE.

PiOFF = SETPOINTS ARE CHANGEABLE.

PiOn = SETPOINTS ARE NOT CHANGEABLE.

DPYH-4396U/DPYH-4398U - FLOWCHART



SCAN AUTO/MAN: AUTO - DISPLAYS EACH CHANNEL NUMBER AND CORRESPONDING TEMPERATURE FOR APPROXIMATELY 2.25 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 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. PRESSING THE ENTER KEY SAVES THE NEW VALUE AND DISPLAYS THE SAME SETPOINT. PRESSING 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
6 OR 8 POINTS
SETPOINT PROTECTION OFF
FILTER: 230

SETPOINTS IN DEG. F: 1000

FLOWCHART KEY

XXXX °F — △ DOUBLE BARS- USE UP AND DOWN ARROW KEYS TO SCROLL

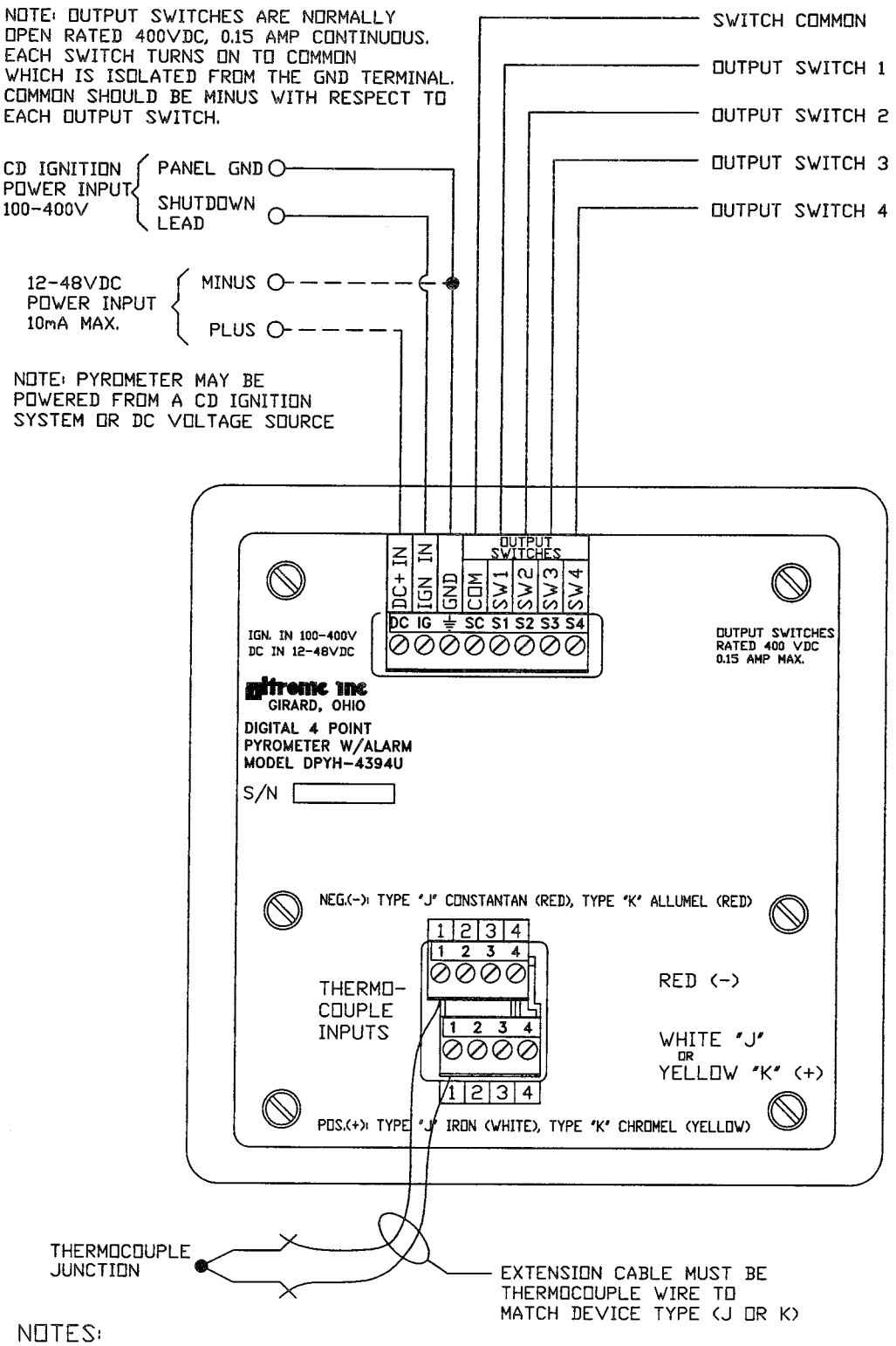
dEG°F dEG°C — DASHED LINES- MAKE SELECTION

XiPtS = MAXIMUM NUMBER OF POINTS DISPLAYED IN SCAN CYCLE.

PiOFF = SETPOINTS ARE CHANGEABLE.

PiOn = SETPOINTS ARE NOT CHANGEABLE.

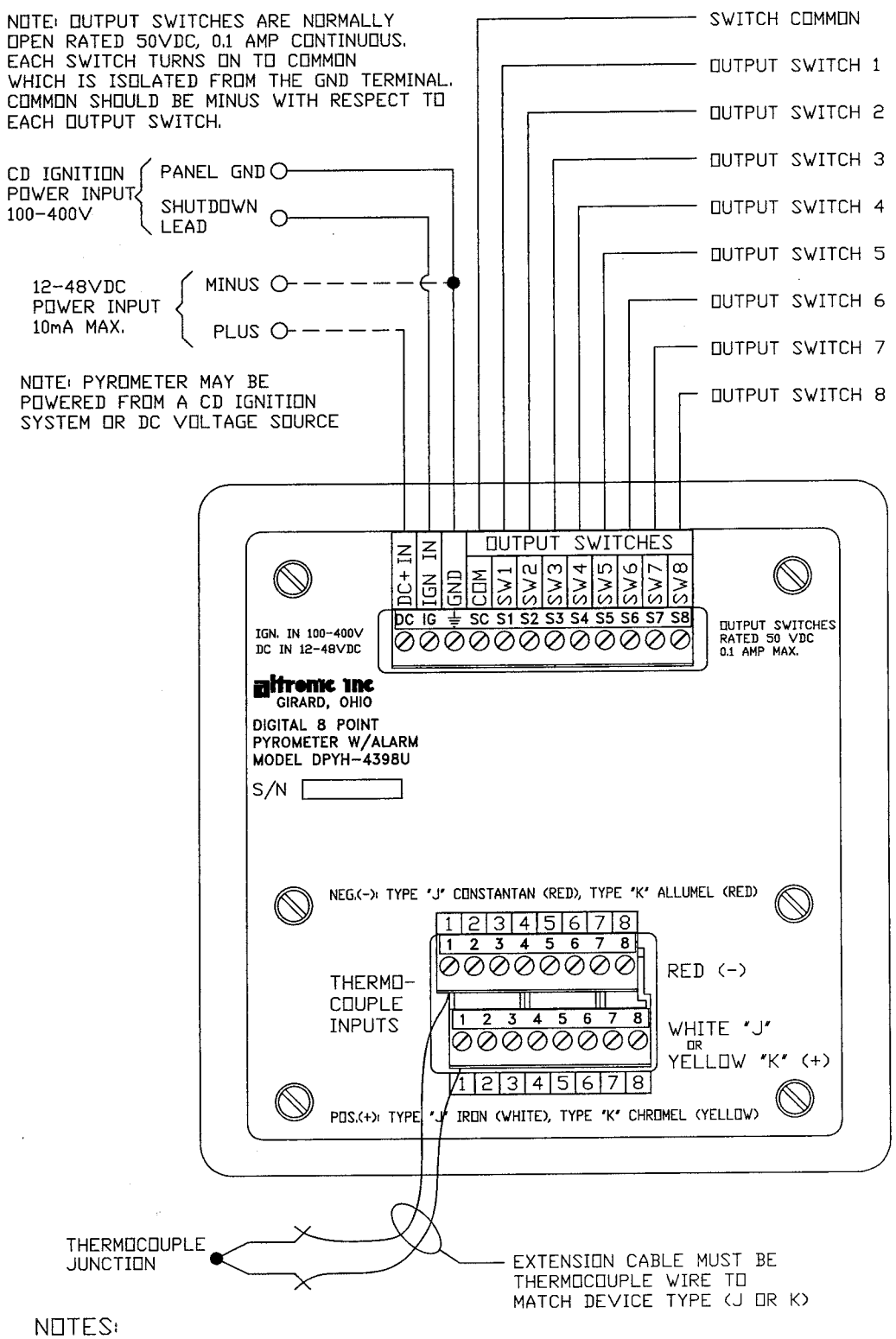
GENERAL ELECTRICAL CONNECTIONS



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.

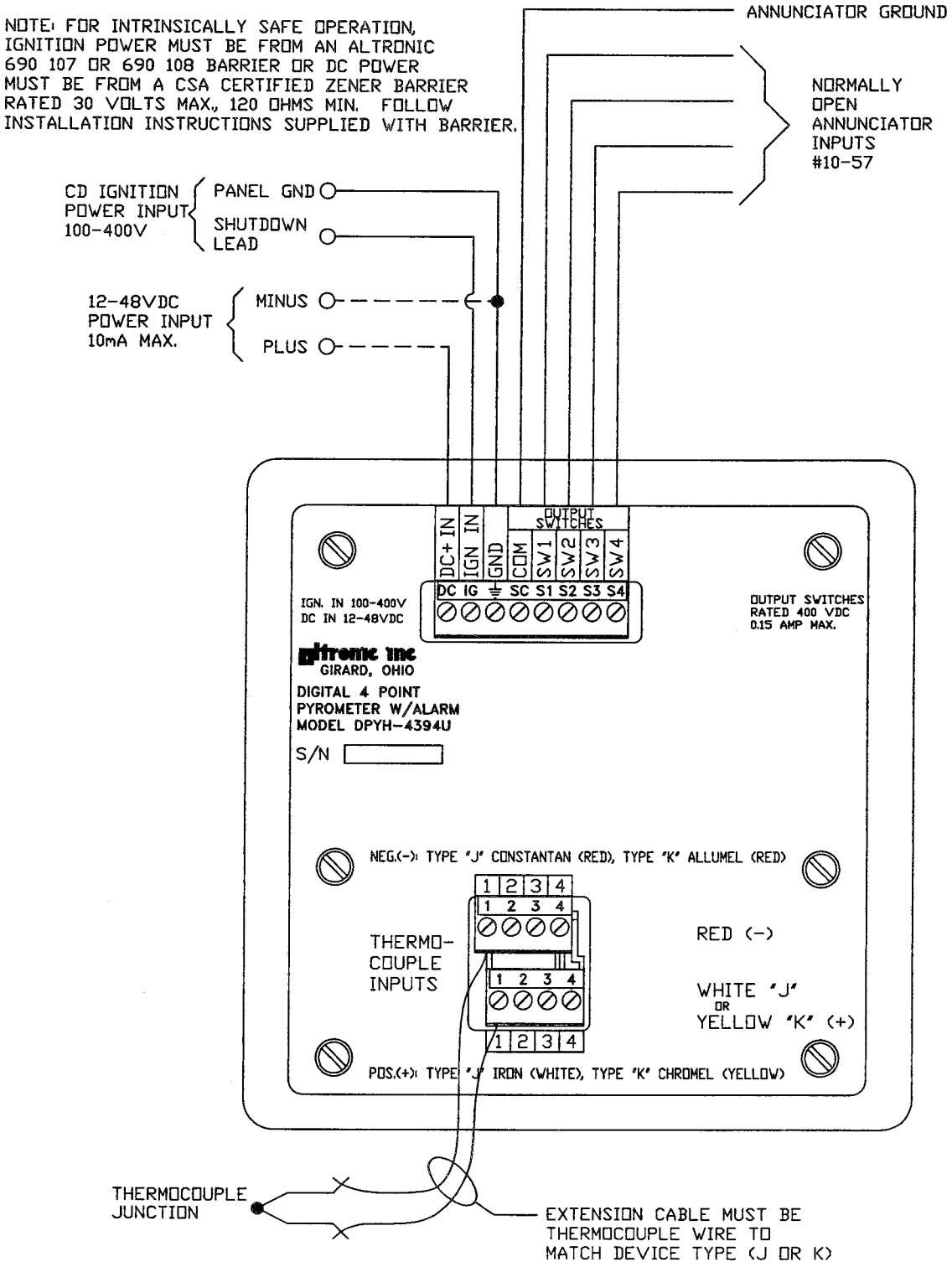
GENERAL ELECTRICAL CONNECTIONS



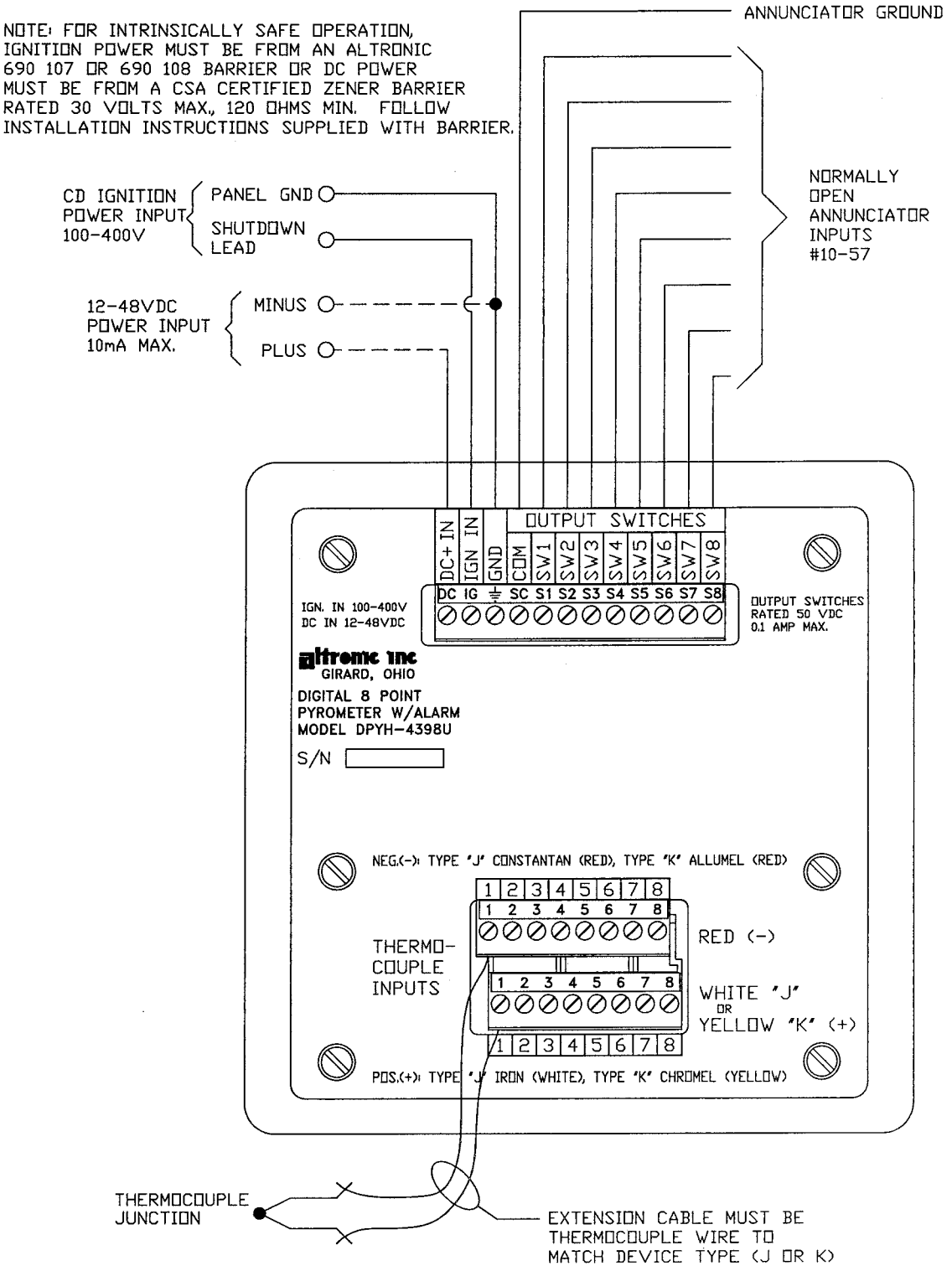
NOTES:

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.

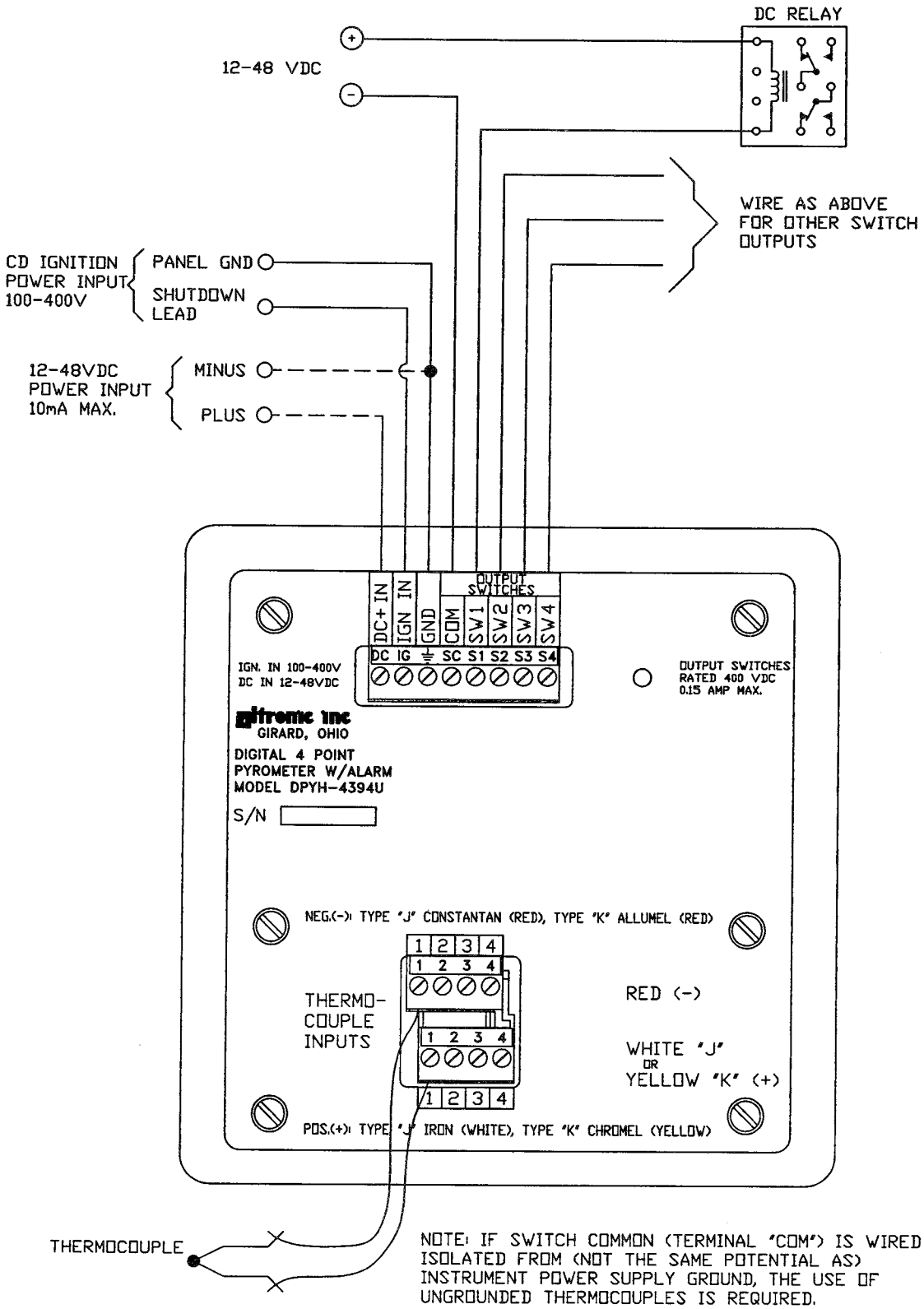
WIRING DIAGRAM
ALTRONIC ANNUNCIATOR SYSTEMS



WIRING DIAGRAM
ALTRONIC ANNUNCIATOR SYSTEMS

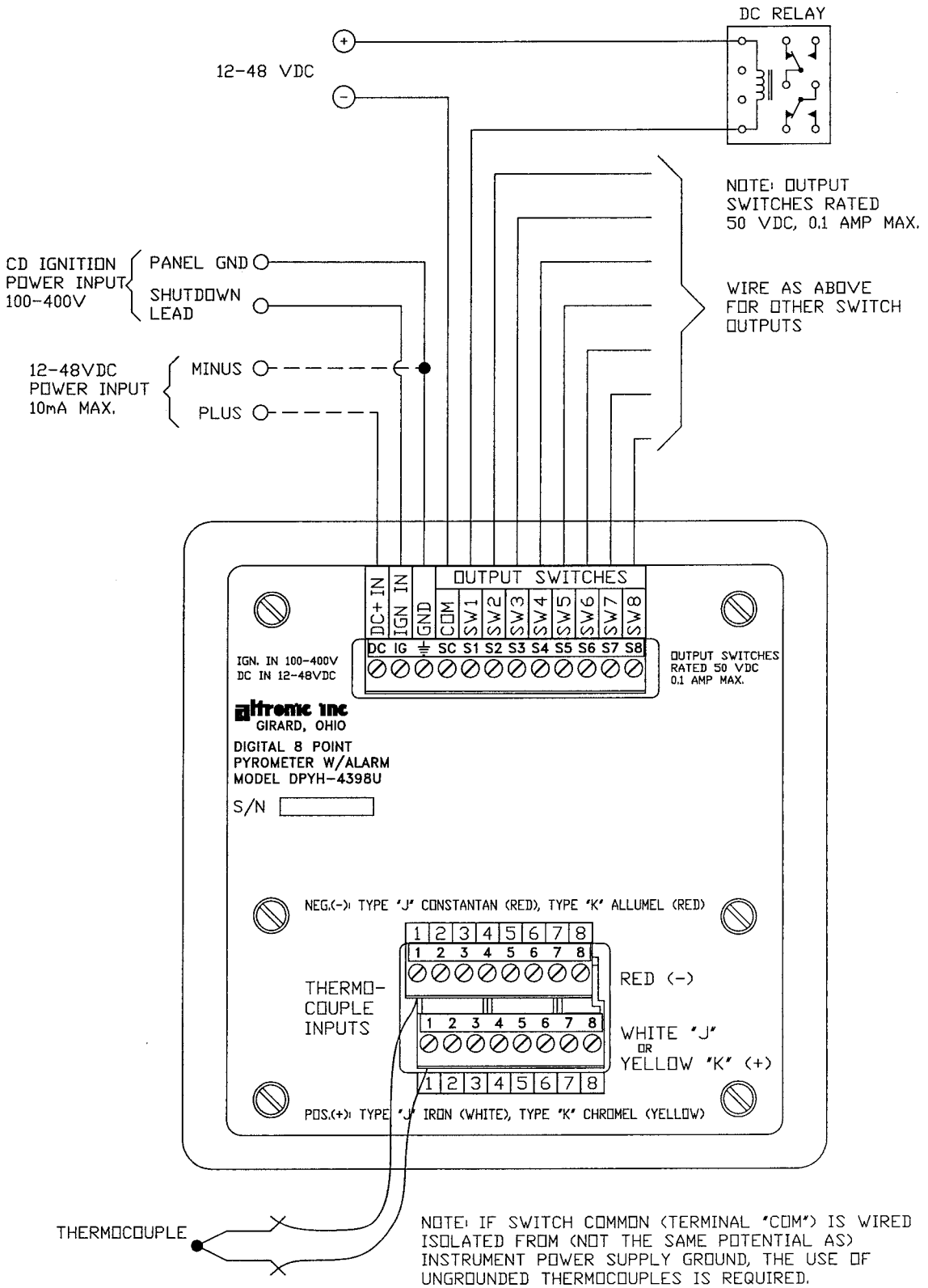


WIRING DIAGRAM – DC RELAY



NOTE: 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.

WIRING DIAGRAM – DC RELAY



WIRING DIAGRAM
MURPHY TATTLETALE or PNEUMATIC VALVE
DPYH-4394U PYROMETER