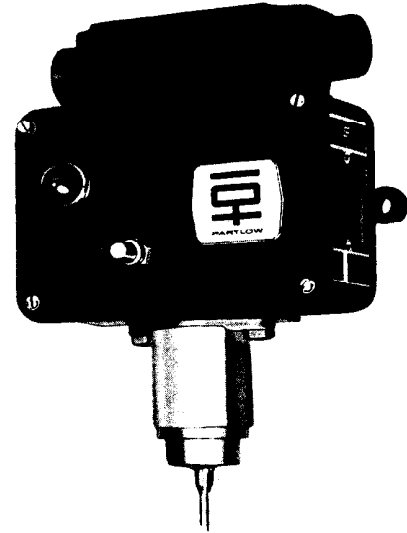


In order to provide operational and service assistance to the end user of this instrument, these instructions must accompany the instrument to its final installation.

INSTRUCTIONS

Non-Indicating High Temperature Limit Devices

MODELS OL63X & O63X



Models OL63X and O63X are single-switch, high temperature limit devices. Model OL63X is factory set and sealed, and carries UL-approval — the UL emblem appearing on its rating plate. Model O63X, the unset version, must be set and sealed in the field during installation — at which time it qualifies for UL component approval. Its rating plate does not carry the UL emblem.

INSTALLATION

LOCATION

1. The element head assembly is subject to ambient temperature limitations of -30°F. to 125°F. (-35°C. to 52°C.) for 112 and 217 range elements, and $+32^{\circ}\text{F.}$ to 150°F. (0°C. to 66°C.) for all other ranges. These temperature limitations must be considered when locating instruments.
2. Locate the device where it will be as free from vibration as possible.

MOUNTING

1. Surface-mount through ears on body, using $\frac{1}{4}$ " screws.

ELEMENT INSTALLATION

1. Position the instrument's thermal sensing bulb adjacent

to the primary controller sensing bulb. Both sensors should be located in the most agitated part of the controlled medium. CAUTION — Unless carefully engineered, placing limit sensor in other locations (to protect other areas of equipment or process) may cause nuisance shut-downs or even fail to protect soon enough against failure of the primary controller.

2. Completely immerse sensing bulb in medium (when U or Y-type bulb, note separation coupling between bulb and capillary).
3. Do not bend capillary to less than $\frac{1}{2}$ " radius and never bend too close to element bulb or element head (two finger-widths distant).
4. Anchor excess capillary securely to prevent vibration damage.

SPECIFICATIONS

DIMENSIONS	$5\frac{5}{16}$ " W x 5" H x $2\frac{1}{4}$ " D
SWITCH TYPE	Partlow No. 63 single-pole single-throw, normally closed, trip-free manual reset
SWITCH SENSITIVITY	1% of element range
ELECTRICAL HOOKUP	Terminal block in conduit outlet box
CONDUIT OPENINGS	Threaded $\frac{1}{2}$ -NPT inlet and outlet
SWITCH RATING	250 VA pilot duty, 125 or 250V, AC only

Dynapar, Veeder Root, and Eagle Signal Brands:

Sales, Repair, and Application Support:
1675 Delany Rd.
Gurnee, IL. 60031
847-662-4150 Sales/Order Entry Fax
847-782-5277 Applications Support Fax
800-873-8731 Sales/Order Entry
800-234-8731 Applications Support

NorthStar Brand:

Sales, Repair, and Application Support:
1675 Delany Rd.
Gurnee, IL. 60031
847-782-5288 Sales/Order Entry Fax
847-782-5277 Applications Support Fax
800-326-6216 Sales/Order Entry
800-326-6216 Applications Support

Partlow, West, Rustrak, and LFE Brands:

Sales, Repair, and Application Support:
1675 Delany Rd.
Gurnee, IL. 60031
847-662-4150 Sales/Order Entry Fax
847-782-5277 Applications Support Fax
800-873-8731 Sales/Order Entry
800-866-6659 Applications Support

Please disregard all phone numbers and addresses in this manual. The phone numbers and address on this page are the correct phone number and addresses to use for sales, repair, and application support.

- If bulb is to be subjected to corrosive or scouring conditions, it should be protected by a thermal well, separable socket, or other protective material.
- Bulbs may be elevated up to 40 feet above the instrument without affecting calibration. For elevations over 40 feet, consult factory.

STUFFING BOX INSTALLATION (if applicable)

Overtightening of 21-T-105 steel or stainless steel stuffing boxes can damage the thermal element by restricting the capillary bore. To prevent damage, the stuffing box gland nut should be turned $\frac{1}{2}$ to $\frac{3}{4}$ of a revolution from a finger-tight position. This is equivalent to a torque of 65 to 100 inch-pounds for steel and 130 to 180 inch-pounds for stainless steel.

WIRING

Check applicable local electrical codes, ordinances and regulations regarding use of conduit, etc. **If possible, make connections using short section of flexible cable or conduit.**

- Remove the two screws at top of instrument conduit box and lift off cover, exposing connection terminal block.
- See wiring diagram below and make necessary electrical connections. Replace conduit box cover.

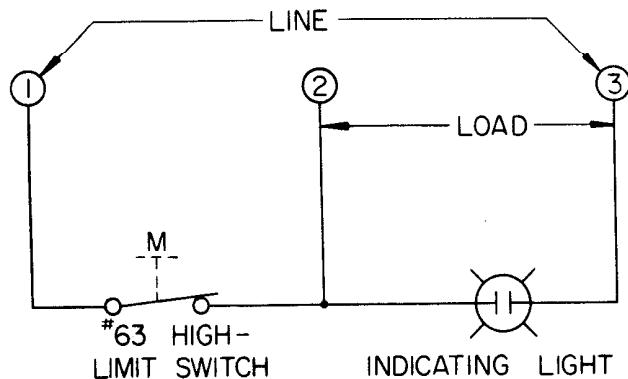


Diagram illustrates condition of switch when temperature is below its high-limit setting.

PRE-START-UP

The factory-set Model OL63X should be checked against a test thermometer of known accuracy before being put into service. The unset version, Model O63X, must be field set and sealed before being placed in operation. For switch setting and checking procedures, see MAINTENANCE section.

OPERATION

The Model OL63X is factory-set at the desired high-limit temperature and its switch adjustment screw factory-sealed to prevent unauthorized field setting; Model O63X is the unset version, which must be set and sealed in the field during installation. To guard against tampering, both instruments are equipped with two capstan cover screws through which a wire may be threaded and secured with a lead seal.

The instrument's high-limit switch is always set at a safe temperature above the primary controller setting. A cover-mounted amber signal light remains **on** during normal operation. In the event the setting of the primary temperature controller is exceeded, the high-limit switch in the limit device will actuate when its setting is reached — de-energizing the signal light and shutting down the equipment.

When the process temperature returns to a point below the high-limit setting (and any problem corrected), the switch can be reset and equipment restarted by pressing the switch reset button on the instrument's front cover.

MAINTENANCE

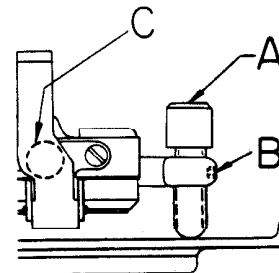
CHECKING SWITCH SETTING OF MODEL OL63X

- Use test thermometer of known accuracy.
- Position test thermometer sensing bulb or probe adjacent to the Model OL63X Partlow sensing bulb.
- Equipment should be operating and amber signal light on instrument cover should be **on**. If equipment will not start and amber signal light is **off**, press switch reset button on instrument cover.
- The limit setting at which the instrument was factory-set is printed on switch label at front of instrument conduit box. This is the setting to be checked.
- Run process temperature up to this setting and (observing test thermometer) note at what temperature the amber signal light goes **out**. The signal light should go **out** just as switch set-point is reached.
- After process temperature has returned to below switch actuation point, switch setting may be rechecked by pressing reset button on instrument cover and repeating Step 5.
- Although very unlikely, if it is found that the temperature at which the switch actuates (light goes **out**) differs from the switch setting by more than 1% of scale range, the switch should be reset (see Re-setting Model OL63X Switch below). If the difference is 5% or more of scale range, the instrument should be replaced.

RE-SETTING MODEL OL63X SWITCH

If, after following the above switch-checking procedure, re-setting is necessary, proceed as follows:

- Withdraw the four cover screws and remove instrument cover.
- Note switch adjusting screw A and its sealed Allen-head set screw B (see diagram). Before any adjustment can be made, set screw B must be cleared of sealant (use



No. 53 drill — then scribe or pointed tool) to accommodate 1/16" hex wrench.

3. Run process temperature up to the high-limit setting (note test thermometer). If the switch actuates (amber light goes **off**) before the high-limit point is reached, loosen set screw B and turn adjusting screw A clockwise a few turns. This will raise the switch actuation point and will prevent further premature actuation. After this adjustment, press reset point C to reset switch and turn signal light **on**.
4. Bring process temperature to the desired high-limit setting (note test thermometer) and allow it to stabilize at this point; then slowly turn adjusting screw A counter-clockwise until switch actuates — turning signal light **off**.
5. Lower process temperature and reset switch by pressing point C.
6. Check new switch setting by again running up process temperature and noting at what test thermometer reading the switch actuates (signal light goes **out**). A few fine screw A adjustments may be necessary to zero in setting — amber light should go **out** just as test thermometer reading reaches the desired high-limit temperature.
7. After final adjustment has been made, tighten set screw B.
8. To meet Underwriters Laboratory requirements, the Allen-head set screw B must be re-sealed to prevent unauthorized changing of the switch set-point. Seal using G.E. Glyptol, Duco cement or equivalent.

TO SET MODEL O63X SWITCH

The Model O63X switch **must** be set and setting **sealed** at time of installation. Procedure for setting the Model O63X switch is the same as for the OL63X model — set screw B is loosened and switch adjusting screw A turned until switch actuates at the desired setting (see OL63X switch setting procedure above).

Note — To comply with Underwriters Laboratories component recognition requirements, be sure to seal set screw B after completing adjustments.

SWITCH REPLACEMENT

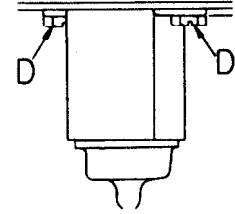
1. Remove instrument's front cover.
2. Remove the two switch holding screws E on the defective switch (see dimensional diagram).
3. Take out switch and remove wires.
4. Replace wires on new switch, being certain they are replaced on same terminals as removed, and reassemble in case.
5. Replacement may slightly alter switch actuation point. Actuation point of new switch should be checked.

ELEMENT REPLACEMENT

To change a thermostatic element:

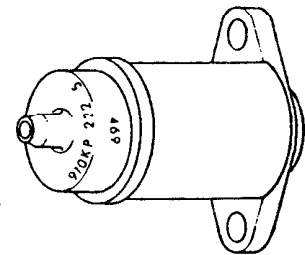
1. Withdraw screws D and drop element from instrument body.
2. Install new element and tighten screws D.

Note—After element replacement, switch setting should be checked.



ELEMENT IDENTIFICATION

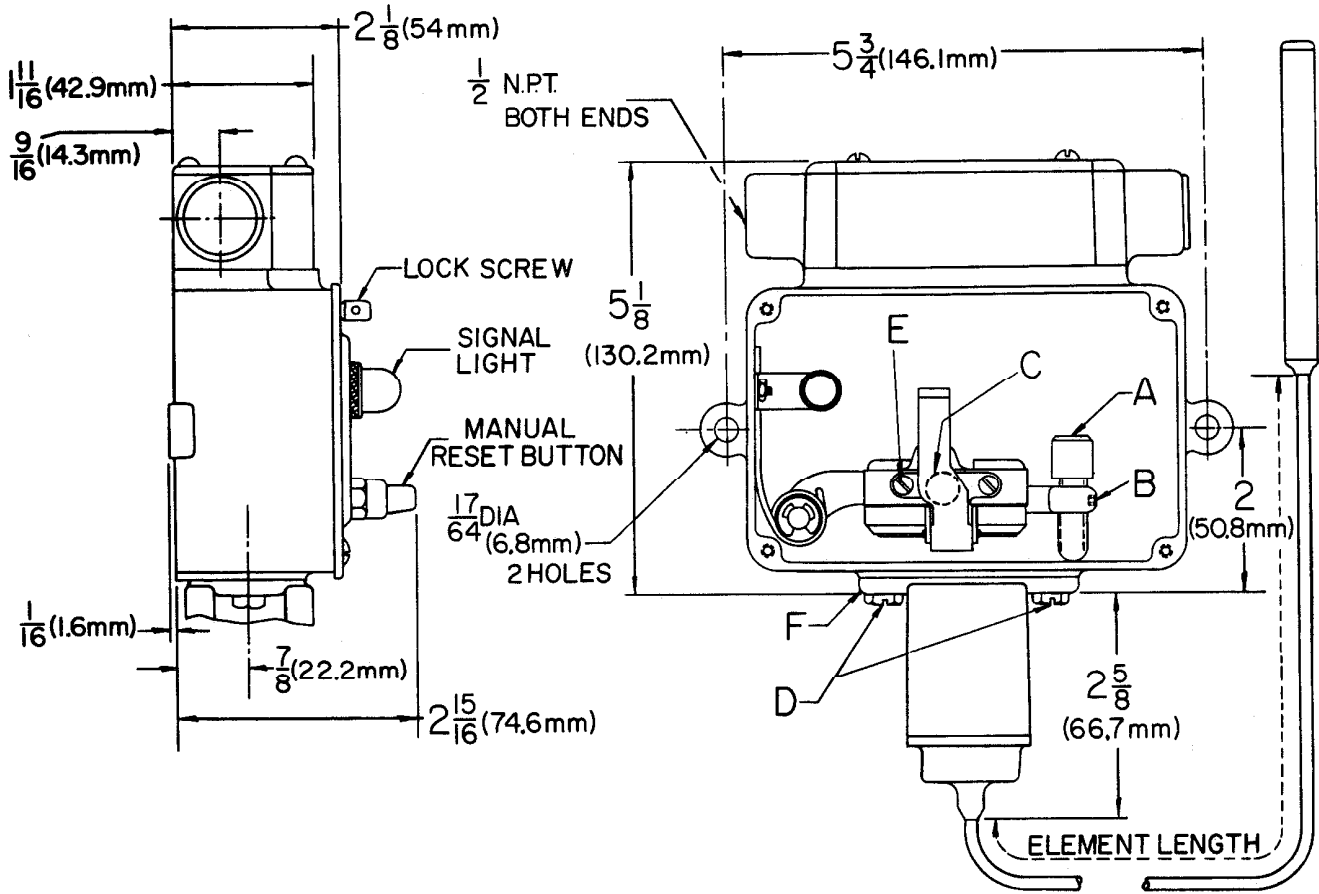
An element designation number is stamped on the **bottom** of the element head. This is a coded description of element specifications and should be used whenever a replacement element is ordered. The last digit (or digits) of the designation number indicates the length of the element in feet. The number appearing on the **side** of the element head is the element age code, which may be required in establishing warranty.



CAUTION

The inside mechanisms, particularly the inside of the element housing, should **never** be oiled. However, if the instrument interior is subject to corrosion or gunking conditions, the linkage should be sprayed periodically with corrosion-inhibiting **CRC3-36**. Use **only CRC3-36**, as other lubricants may cause buildup and sticking of internal parts.

DIMENSIONS



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These products are warranted to be free from functional defects in materials and workmanship at the time the products leave the Partlow factory, and to conform at that same time to the specifications set forth in the relevant Partlow instruction sheet (or sheets) for such products.

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