

DELTRONIC

"SYMBOL OF QUALITY MEASUREMENT FOR OVER 40 YEARS"

612-R OPERATOR'S MANUAL MICROPROCESSOR READOUT with EDGE-SENSING OPTION

DELTRONIC CORPORATION

3900 W. SEGERSTROM AVE SANTA ANA, CA. 92704 (714) 545-0401

Copyright DELTRONIC CORP. 3/18/1993
Ver. 5.3

TABLE OF CONTENTS

I. DESCRIPTION OF THE 612-R with EDGE-SENSING OPTION

A. Front Panel _____	4
----------------------	---

II. OPERATING THE 612-R

A. Activating the 612-R _____	6
B. Presetting Values in Live Display _____	6
C. Using Memory in Live Display _____	7
D. Using the Centerline Function _____	8
E. Escaping from a Function _____	8
F. Turning Off the 612-R _____	8
G. Using the Auto-Edge Function _____	9
H. Using Edge-Calibration _____	10
I. Using Distance-Calibration _____	12
J. Using Datum Reference _____	12
K. Setting the Center of a Hole as an Incremental Zero _____	14
L. Using the Radius Function _____	14

III. SETTING OPTION PARAMETERS

A. The Options of the 612-R _____	16
B. Using the Set-Up Mode _____	18
C. How to Change Selected Set-Up Options _____	20
D. How to Set Linear Compensation _____	20
E. How to Clear the 612-R Parameters _____	21
F. How to Edit the Edge-Detector Pots _____	22

IV. OPTIONAL RS-232 INTERFACES

A. Printer Specifications _____	23
---------------------------------	----

V. PERFORMING DIAGNOSTIC TESTS

A. Diagnostic Tests of the 612-R _____	24
B. Test Procedure _____	25
C. Tests and Test Response _____	25
D. Possible 612-R Errors _____	26

VI. SERVICE

A. No Customer Serviceable Parts _____	28
B. Contact Deltronic for Service _____	28

VII. SAFETY REQUIREMENTS WARNING

A. WARNING

28

I. DESCRIPTION OF THE 612-R with EDGE-SENSING OPTION

A. The Front Panel of the 612-R consists of:

1. Two LED readouts for the X and Y axes

2. A numeric keypad

- a. The ten digits (0-9)
- b. A decimal point [.]
- c. A positive/negative key [+/-]
- d. An enter key [ENTER]
- e. A back space key [BACK SPACE]
- f. A centerline key [CL]
- g. A dia key [DIA]

3. Various keys which control the Functions of the Readout:

a. [INC/ABS]

This key allows you to toggle between the Incremental and Absolute modes. The Incremental and Absolute modes are independent scales which are both attached to the stage and operate simultaneously.

b. [MM/IN]

This key allows you to toggle the Readout between metric and English values.

c. [X] and [Y] reset keys

These keys will reset the readout of the designated axis to zero.

d. X and Y [PRESET] keys

These keys will allow you to preset the readout of the designated axis to any desired value.

NOTE: The Absolute and the Incremental modes are independent, so that resetting or presetting values in one mode will not affect the values in the other mode.

- e. **[MEM STORE]** and **[MEM RECALL]**
These keys allow you to store and recall datums and presets.
- f. **[PRINT]** (RS-232)
This key will send the currently displayed readouts to the printer.
- g. **[CENTERLINE]**
This key allows you to halve the value in the readout of the selected axis.
- h. **[EDGE-CAL]** (612-R/E Edge-Sensor option)
This key initializes the Edge-Detector.
- i. **[AUTO]** (612-R/E Edge-Sensor option)
This key will activate Auto Edge Mode and make the first edge crossed the reference edge.
- j. **[EDGE]** (612-R/E Edge-Sensor option)
This key will activate Manual Edge Mode. This mode is used in radius to select edges crossed as input.
- k. **[DATUM REFER.]**
This key allows you to find the distance between the current readout and any preset or recalled value.
- l. **[POLAR]**
Pressing the **[POLAR]** key causes the readouts to display in Polar. The X axis displays the distance, and the Y axis displays the angle.
- m. **[RADIUS]**
Allows the calculation of the radius and center of a circle.
- n. **[DIA]**
Allows you to change between radius and diameter of a circle calculated using the **[RADIUS]** key.

II. OPERATING THE 612-R

A. Activating the 612-R

1. **FLIP** on the **power switch** on the back of the box. The two readouts will flash a line of eights.
2. **PRESS** either the **[X]** or **[Y]** reset key to clear the readouts to zero. You are now in live display.

B. Presetting Values in Live Display

1. Presetting values for first axis:
 - a. **PRESS** the **[PRESET]** key for the axis to be preset. Underbars will now be displayed in the readout of that axis.
 - b. **ENTER** the value using the numeric keypad.

NOTE: The sign of the value may be changed with the **[+/-]** key. The **[BACK SPACE]** key may be used to back space if a mistake is made.

- c. **PRESS** the **[ENTER]** key. The value of that axis has now been set to the new value.
2. Presetting values for second axis:
 - a. **REPEAT** steps a-c above.
3. Presetting both axes simultaneously to the same value:

NOTE: BOTH AXES MAY BE PRESET SIMULTANEOUSLY ONLY IF BOTH AXES ARE SET TO THE SAME RESOLUTION.

- a. **PRESS** the **[PRESET]** key for each axis in any order. Underbars will be displayed in both readouts.
- b. **ENTER** the value using the numeric keypad.
- c. **PRESS** the **[ENTER]** key. The values of both axes have now been set to the new value.

C. Using Memory in Live Display

NOTE: The memory recall function always changes only the values in the Incremental mode and leaves the Absolute mode unaffected.

1. To store the current X and Y display as a preset:
 - a. **PRESS** the **[MEM STORE]** key.
A single underbar will appear in the Y readout.
 - b. **SELECT** one of the registers by pressing a number (1-9).
 - c. **PRESS** the **[PRESET]** key. The readouts have now been stored in the designated register.
2. To store the current location as a datum position:
 - a. **PRESS** the **[MEM STORE]** key.
A single underbar will appear in the Y readout.
 - b. **SELECT** one of the registers by pressing a number (1-9).
 - c. **PRESS** the **[ENTER]** key. The current position has now been stored in the designated register.
3. To store the current Incremental zero as a datum position:
 - a. **PRESS** the **[MEM STORE]** key.
A single underbar will appear in the Y readout.
 - b. **SELECT** one of the registers by pressing a number (1-9).
 - c. **PRESS** the **[DATUM REFER.]** key. The current incremental zero has now been stored in the designated register.
4. To retrieve previously stored readout values:
 - a. **PRESS** the **[MEM RECALL]** key. A single underbar will appear in the Y readout.
 - b. **SELECT** the register from which you wish to recall the readout values by pressing a number (1-9).
 - c. **PRESS** the **[ENTER]** key. A datum's location will be set to zero, or a preset will be displayed.

D. Using the Centerline Function:

1. **PRESS** the **[CENTERLINE]** key. The readouts will flash back and forth between X and Y axis.
2. **SELECT** the axis which you need to halve, by pressing the **[X]** or **[Y]** key, or select both axes by pressing the **[ENTER]** key. The readout for the chosen axis will now display half its former value.

E. Escaping from a Function:

1. In general, to escape from a function, merely **PRESS** that same function key again.

F. Turning Off the 612-R

1. **FLIP** power switch off.

NOTE: When the 612-R is turned off, the following values are retained in Memory.

1. All Set-up values.
2. The values in the memory registers.

G. Using the Auto-Edge Function

1. To enter Auto-Edge:

- a. **PRESS** the [AUTO] or [EDGE] key. The X axis has been automatically chosen and will flash until you cross your reference edge. The readout will then be set to zero and be frozen. The readout for the X axis will be updated each time you pass an edge.

NOTE: Before crossing an edge, you may preset the value for the reference edge. The edge would then be set to the preset value instead of zero.

2. To choose another axis:

- a. **PRESS** the reset key for that axis. The readout for that axis will flash until you cross your reference edge. The readout will then be set to zero and be frozen. The readout for the chosen axis will be updated each time you pass an edge.

3. To set an axis to a particular value at an edge:

- a. After you have crossed an edge, Press the reset key for the selected axis to set the edge to zero. Or, preset a value into the selected axis to set the last edge to that value.

H. Using Edge-Calibration

1. **PRESS** the [EDGE-CAL] key. The message 'Edge CAL' will appear in the Y readout.

NOTE: To escape from the Edge-Cal or Distance-Cal functions, **PRESS** the [0] key and you will return to live display.

2. **PRESS** the [ENTER] key. 'LitE' will be displayed.
3. **Expose** the probe to a light area.
4. **PRESS** the [ENTER] key. 'ShAdE' will be displayed.
5. **Expose** the probe to a dark area.
6. **PRESS** the [ENTER] key. 'LitE' will be displayed.
7. **Expose** the probe to a light area.
8. **PRESS** the [ENTER] key. The edge-detector has now been set, and you have been returned to live display.

I. Using Distance-Calibration

1. **PRESS** the [EDGE-CAL] key twice. The message 'diSt CAL' will appear in the Y readout.
2. **PRESS** the [ENTER] key. The X axis will be chosen automatically. To select the Y axis, press the [Y] reset key. The chosen axis will flash.
3. **MOVE** the chosen axis scale past one edge of the master.
4. **MOVE** the chosen axis scale past the other edge of the master and **PRESS** the [ENTER] key. If the display value matches the value entered in setup as the master length, (see section III A-4) you will be returned to live display. If not, the detected distance of master will be displayed, and the axis readout will continue to flash.
5. To try Distance-Calibration again, repeat steps 3 and 4 above. You may try Distance-Cal as many times as you like. If you decide to return to live display without successful distance calibration, **PRESS** the [EDGE-CAL] key.

J. Using Datum Reference

1. **RECALL** or **PRESET** the initial value for Datum Reference.
2. **PRESS** the [DATUM REFER] key.
3. **ENTER** the memory point location of the second value for datum reference.
4. **PRESS** the [ENTER] key. The distance from the first value to the second value will be displayed.
5. At this point, there are several options:
 - a. **PRESS** the [INC/ABS] key to find the distance from the initial absolute value or the initial incremental value to the second value.
 - b. **PRESS** the [POLAR] key to find the straight line distance and direction from the initial value to the second value.

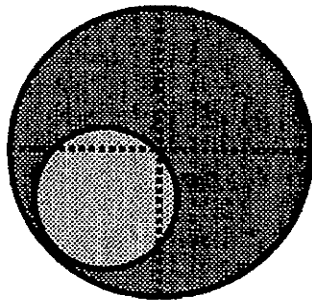
- c. **RECALL** or **PRESET** another second value, and the new Datum Reference will be displayed.
- d. **PRESS** the **[DATUM REFER.]** key and you will be returned to live display at your initial position.

K. Setting the Center of a Hole as an Incremental Zero:

1. **PRESS** the **[AUTO]** key.
2. **MOVE** across the hole in the X direction.
3. **PRESS** the **[Y]** reset key.
4. **MOVE** across the hole in the Y direction.
5. **PRESS** the **[CENTERLINE]** key.
6. **PRESS** the **[ENTER]** key.
7. **PRESS** the **[AUTO]** key. The center location of the hole is now an Incremental zero.

L. Using the Radius Function

1. **PRESS** the **[RADIUS]** key.
You will now be asked to enter a point.
2. **MOVE** the stage to a point on the edge of the circle.



3. **PRESS** the **[ENTER]** key.
You will now be asked to enter another point.
4. **REPEAT** steps (2) and (3) until you have entered 3 points. The 612-R will calculate and display in the X axis.
5. **PRESS** the **[DIA]** key to switch the display from radius to diameter and back to radius.
6. To leave radius, **PRESS** the **[RADIUS]** key.

7. To store the center of the circle, **PRESS** the **[STORE]** key, a number (1-9) and the **[ENTER]** key.

III. SETTING OPTION PARAMETERS

A. The options of the 612-R:

1. Polarity

- a. This option allows you to change the polarity of the scale for one or both axes. This option will change the direction in which the readout will count while the stage is moved in a particular direction.

2. Crosshairs calibration (612-R/E Edge-Sensor option)

- a. This option allows you to enter the offsets to be taken into account when the Edge-Detector is in use.
- b. Enter the X and Y offsets in the same manner in which you preset a number. Whenever you use Edge Function, these offsets will be added to the X and Y readout values.

3. Decimal degrees / Degrees and minutes

- a. This option allows the displaying of polar angle in either decimal degrees or in degrees and minutes.
- b. When this option is set to zero, the angle is displayed in degrees and minutes. When this option is set to one, the angle is displayed in decimal degrees.

4. Distance Calibration (612-R/E Edge-Sensor option)

- a. This option allows you to set the size of the master which will be used in the distance calibration routine. Enter the size of the master in the Y readout in the same manner in which you would preset a number.

5. Diagnostic Tests

- a. This option allows you to determine whether or not the 612-R is functioning properly. (See Section V: PERFORMING DIAGNOSTIC TESTS)

6. Code

- a. The code option allows you to enter the 612-R code.
- b. **ENTER** the three digit code using the numeric keypad and **PRESS** the [ENTER] key.
- c. Once the code has been entered, you will be able to scroll through the full 612-R menu.

7. Resolutions

- a. This option allows you to set the resolutions for the two axes. Following is a list of the six possible resolutions for the Millimeter and the Inch modes:

Resolution	mm	inch
1	.01	.0005
2	.005	.0002
3	.002	.0001
4	.001	.00005
5	.0005	.00002
6	.0002	.00001

8. Install (612-R/E Edge-Sensor option)

- a. This option allows you to see the amount of light coming in through the fiber optics. The amount of light coming in through the signal fiber optic will be displayed in the X axis readout and the amount for the reference fiber optic in the Y axis readout. The amounts will be displayed on a scale of 0 to 99.

9. Radius/Diameter

- a. This option allows you to switch one or both axes between the Radius and Diameter modes. Using this option will cause the readout values to be doubled for use with a lathe.

10. Linear Standard and Linear Error

- a. These options allow you to set up Linear Compensation on your 612-R. (See section III-D: How to Set Linear Compensation.)

11. Edit Pots (612-R/E Edge-Sensor option)

- a. This option allows you to alter the values of the Edge-Detection pots of your 612-R/E. (See section III-F: How to Edit the Edge-Detector Pots.)

12. Clear

- a. The Clear option allows you to reset the Set-up parameters of the 612-R to their initial values. (See section III-E: How to Clear the 612-R Parameters.)

B. Using the Set-up Mode

1. The Set-up Mode allows you to set the options that control the functioning of the box.
2. To enter the Set-up Mode:
 - a. While in live display, **PRESS** the [5] key two times.
 - b. The word 'SEtUP' will appear in the Y readout.
 - c. **PRESS** the [ENTER] key to get into the Set-up menu.
3. To scroll through the Set-up menu:
 - a. **PRESS** the [5] key.
 - b. The current Set-up option will change.
 - c. Continue to **PRESS** the [5] key and you will return to the beginning of the Set-up menu.
 - d. To back up to a previous Set-up option, **PRESS** the [6] key.
4. To choose a Set-up option:
 - a. While the message of the desired Set-up option is displayed, **PRESS** the [ENTER] key. You will now be able to view and/or change the value of that Set-up option.
5. To leave a Set-up option:
 - a. **PRESS** the [0] key and you will return to Set-up menu.

6. To leave the Set-up Mode:

- a. While in the Set-up menu, **PRESS** the [0] key and you will return immediately to live display.

C. How to Change Selected Set-up Options

1. **PRESS** the **[PRESET]** key next to the value that you wish to change. A single underbar will appear.
2. **PRESS** the number to which you wish to change the value. (If the number that you press is not acceptable for that option, there will be no response.)

D. How to Set Linear Compensation

1. **ENTER** the Set-up Mode.
2. **SELECT** the Linear Standard option.
3. **PRESET** the size of the X master in the X readout. The 612-R will accept only a positive standard for linear compensation.
4. **PRESET** the Y master in the Y readout.

NOTE: If a master of zero is preset for an axis, the 612-R will do no linear compensation for that axis.

5. **PRESS** the **[0]** key.
6. **SELECT** the Linear Error Option.
7. **PRESET** the X error in the X readout. If the error is positive, the 612-R will add counts to the display. If the error is negative, the 612-R will subtract counts.
8. **PRESET** the Y error in the Y readout.

WARNING: THE ERROR SHOULD NOT EXCEED 10% OF THE STANDARD. If the error exceeds this amount, the compensation may yield unexpected values.

9. **PRESS** the **[0]** key.
10. **LEAVE** the Set-up Mode. The 612-R will now perform linear compensation on the scale inputs.

E. How to Clear the 612-R Parameters:

1. **ENTER** the Set-up Mode.
2. **SELECT** the Clear option.
3. **CHOOSE** one of the following options:
 - a. 0 -- Exit with no change.
 - b. 1 -- Set to Deltronic 612-R/E defaults.
 - c. 2 -- Set to Deltronic 612-R defaults.
 - d. 3 -- Clear to defaults only.
 - e. 4 -- Set MM boot-up.
 - f. 5 -- Set IN boot-up.
 - g. 6 -- Turns "DELAY" Off. (Enter #3 to turn "DELAY" On)
4. **LEAVE** the Set-up Mode.

F. How to Edit the Edge-Detector Pots:

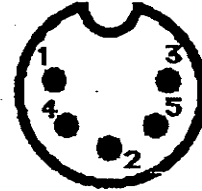
1. **ENTER** the Set-up Mode.
2. **SELECT** the Edit Pots option. The current address of the Edit Pots routine will be displayed in the X readout.
3. **PRESS** the **[PRINT]** key to display the values of the five pots after the last Edge Calibration. The values will be displayed in hexadecimal. **PRESS** the **[PRINT]** key again to return to the Edit Pots routine.
4. The Edit Pots routine has the following options:
 - a. **PRESS** the **[ENTER]** key to set the address to zero.
 - b. **PRESS** the **[1]** and **[ENTER]** keys to increment the address by one.
 - c. **PRESS** the **[2]** and **[ENTER]** keys to tweak an enabled pot until an interrupt occurs.
 - d. **PRESS** the **[3]** and **[ENTER]** keys to decrement the address by one.
 - e. **PRESS** the **[4]** and **[ENTER]** keys to increment the address by four.
 - f. **PRESS** the **[5]** and **[ENTER]** keys to write to the address displayed in the X readout.
 - g. **PRESS** the **[6]** and **[ENTER]** keys to tweak the enabled pot ten times.
 - h. **PRESS** the **[7]** and **[ENTER]** keys to tweak the enabled pots one time.
 - i. **PRESS** the **[8]** key and set the tweak routine to tweak the pots up.
 - j. **PRESS** the **[9]** key and set the tweak routine to tweak the pots down.
5. **PRESS** the **[0]** key to return to the Set-up menu.

IV. OPTIONAL RS-232 INTERFACES

5-Pin male DIN plug



Front view of DIN plug



A. Printer Specifications

1. **PLUG** the printer cable into the J1 DIN connector.
Pin #1: not used
Pin #2: not used
Pin #3: ground
Pin #4: output to printer
Pin #5: not used
2. Available **BAUD** rate: **600**
3. Serial Data Format:
 - a. 1 start bit
 - b. 8 data bits
 - c. 1 stop bit
 - d. No parity bit
4. Data: Standard RS-232 logic levels.
Spec: test_string DB 'X: 01234567 IN',ODH,'Y 89M-V2.6 IN',OI
Output Examples:
X:-12.12340 IN
Y: 05.10002 IN
X: 123.1234 MM
Y:-1234.120 MM

Always prints X and Y
Fixed minus sign (no plus)
Fixed data length (30 characters)
Floating decimal point

V. PERFORMING DIAGNOSTIC TESTS

A. Diagnostic Tests of the 612-R

1. The RAM test will check the integrity of the Random Access Memory.
2. The ROM test will check the integrity of the Read Only Memory.
3. The keyboard test will allow you to verify that all of the keys are working.
4. The display test will allow you to verify that all segments of the LED display are working.
5. The encoder test will display the raw data coming in from the scales.

B. Test Procedure:

1. **ENTER** the Set-up mode.
2. **SELECT** the test option.
3. **PRESS** the [1], [2], [3], [4], or [6] key, in accordance with the number of the test being run. (Test numbers are listed below.)
4. **PRESS** the [0] key to return to the test mode.
5. **REPEAT** step 3 in order to perform other tests, or **PRESS** the [0] key to return to the Set-up menu.

C. Tests and Test Response.

1. **PRESS** the [1] key for the **RAM** test. The word '**Good**' or an error message will appear in the Y readout.
2. **PRESS** the [2] key for the **ROM** test. The word '**Good**' or an error message will appear in the Y readout.
3. **PRESS** the [3] key for the **Keyboard** test. **PRESS** all the keys one at a time in the following sequence:
 - a. **BEGIN** with the [X] key.
 - b. **CONTINUE** pressing the keys left to right on the top row, the next row, and the next row until you reach the [BACK SPACE] key.
 - c. After pressing [BACK SPACE], if there is a keyboard problem, or if the keys were pressed out of order, an error message will appear. Otherwise, when you finish, the word '**Good**' will be displayed in the Y axis.
4. **PRESS** the [4] key for the **DISPLAY** test. The **LED** display will go through a display pattern. **CHECK** to see that all segments are working.
5. **PRESS** the [6] key for the **ENCODER** test. The readouts will display the raw data coming in from the scales. **MOVE** the scales to see that the values coming in are between 0 and 4095.

D. Possible 612-R Errors:

1. 'Error 0'

Error 0 indicates a hardware malfunction in the scale inputs. This error is not due to either of the axis encoders but to the 612-R hardware.

2. 'Error 1'

This error indicates a hardware malfunction in the scale inputs from the X axis encoder. The corrective action is to replace that axis encoder.

3. 'Error 2'

This error indicates that the distance between two points on the work piece exceeds the capacity of the 612-R to calculate.

4. 'Error 3'

Error 3 indicates failure of the RAM. Corrective action is to replace the CPU board.

5. 'Error 4'

This error indicates failure of the ROM. Corrective action is to replace the CPU board.

6. 'Error 5'

Error 5 indicates failure of the non-volatile RAM. Corrective action is to replace the CPU board.

7. 'Error 6'

Error 6 indicates that one of the keys has malfunctioned. Corrective action is to replace the key.

8. 'Error 8'

This error indicates a hardware malfunction in the scale inputs from the Y axis encoder. Corrective action is to replace that axis encoder.

9. **'Error 9'**

Error 9 indicates a hardware malfunction in the scale inputs from both axis encoders. Corrective action is to replace the axis encoders.

10. **'Error 12'**

This error indicates an edge-calibration error.

11. **'Error 14'**

The limit of distance calibration has been reached. No further calibration is possible.

12. **'Error 15'**

The distance calibration error is too large to calibrate for.

13. **'oFLo'**

This message indicates that the value to be displayed exceeds the capacity of the readouts.

VI. SERVICE

A. No Customer Serviceable Parts

1. THE 612-R HAS NO CUSTOMER SERVICEABLE PARTS.

B. Contact Deltronic for Service

1. All service must be done at the Deltronic factory to abide by warranty and safety requirements. Telephone Deltronic regarding service needs.
(714) 545-0401

VII. SAFETY REQUIREMENTS WARNING

A. WARNING

1. **WARNING: THE 612-R BOX IS NOT TO BE OPENED WHEN PLUGGED INTO 120 VAC ELECTRICAL SOURCE. FAILURE TO COMPLY WITH THESE SAFETY REQUIREMENTS MAY RESULT IN PERSONAL INJURY BY ELECTRICAL SHOCK OR BURN.**

VIII. Section 8. Technical details

8.1 Intended use of the equipment

The 612R unit is designed to be used in conjunction with an Optical Comparator such as the DH216 to provide indication of the stage position and also to perform mathematical operations concerned with measurement of parts. It can be equipped with automatic edge detection.

8.2 Technical specification.

The 612R unit accepts inputs from two linear incremental encoders with TTL or CMOS compatible square wave outputs and will display two dimensional coordinates to a resolution of 7 decimal digits, in Cartesian or Polar form. The display can be corrected for linear and skew inaccuracies when used with a comparator such as the DH216 or DV114. The 612R can also compute the radius from three or more point measurements and can be supplied with automatic edge detection as the 612R-E.

Linear encoders (usually the RSF MSA 6506 1 micron resolution series, although the unit can be supplied with inputs for other encoders) can be plugged directly into the X and Y sockets on the rear panel and their outputs will appear in 7 digit 14mm high displays on the front panel. An associated 13 character 14mm high alphanumeric display gives messages to the operator

8.3 Ratings

Supply voltage range – 90-260VAC 43-63Hz.

Supply current 0.5A AC maximum.

Environmental conditions:

The equipment is intended to operate in a controlled atmosphere where the temperature and humidity are appropriate for mechanical inspection and measurement purposes, but it will operate over the following range:

Temperature – 0-45deg C (32-113 deg F).

Humidity – not greater than 90% RH, non-condensing.

The weight of the unit is approximately 4.5Kg (10 lb).

The dimensions of the unit are 305mm (12 in) wide x 152mm (6 in) high x 216mm (8.5in)

8.4 Description of input and output connections

8.4.1 Main power connection (and disconnect device)

This is a disconnectable 3 pin IEC connector. To isolate the unit from the power line, remove the connector. Note that this connector is the disconnect device for the unit. Users should ensure that there is enough space behind the unit to remove the connector in case of an emergency.

8.4.2 Scale connectors J17 and J18 (linear encoders)

There are two 7 pin DIN sockets on the rear panel marked "X" (J17) and "Y" (J18) to accept the appropriate scale input encoder connectors. These are normally connected to the RSF encoders.

The unit can accept other encoders and in this case the "X" and "Y" sockets will be made appropriate for the encoders used.

8.4.3 Printer socket J1

A five pin DIN socket is provided for serial printer output (see section IV)

8.4.4 "At Zero" socket J2

A five pin DIN socket is provided for an optional, opto-isolated "At Zero" signal which is active when both coordinate displays show zero.

8.4.5 Fiber optic cable connectors "Screen" and "Lamp"

For automatic edge detection, the 612R-E uses two fiber optic cables, one which conveys an optical signal from a point on the screen to sense an edge of the part being measured and the other

from the lamphouse where it is exposed directly to the profile lamp, providing a reference signal. Each fiber optic cable has an "SMA" termination which couples into the corresponding socket.

8.4.6 Optional ground connection.

A 6-32 threaded stud provides an optional ground connection for safety or noise reduction purposes, but normally the ground connection through the power cable will provide this function. Connection to this stud, if it is providing a safety ground, must be as shown in figure 8.4.1

8.5 Connection to the main power supply.

A three pin power lead terminated in an IEC 60320 10A socket conveys power and the safety ground to the unit usually from a wall mounted socket.

The power supply voltage may be nominally 100VAC, 115VAC or 230VAC, 50 or 60Hz.

8.6 Explanation of symbols.



The exclamation mark symbol indicates that the user's handbook should be consulted before connecting or operating the unit.



The ground symbol indicates that a ground connection may be safely made at that location.

8.7 Instructions for cleaning

If cleaning is necessary, a soft cloth should be used with a minimum amount of Isopropyl Alcohol.

8.8 Caution.

Note that if the 612R unit is not used as specified, protection provided to the user by aspects of the design may be impaired.

9. Warning and fuse ratings.

Note that the warranty may be cancelled if the unit cover is removed.

Note that fuses should be replaced with ones of identical type and rating to avoid the risk of fire.

9.1 Power inlet fuses: Deltronic part number 53400102 - 20 x 5mm IEC approved 1.6A 250V type T (Slo-blo).

The main power line fuses (one in the live and one in the neutral wire) in the 612R unit are within the power inlet module. To gain access, remove the power connector and prise up the cover of the inlet module from the right-hand side using a small screwdriver; the cover will hinge back revealing two arrowed subassemblies. Pull on the arrows and each subassembly will slide forward and be seen to contain a 20 x 5mm 1.6A 250V type T fuse. When replacing the arrowed fuse assembly, note that the arrows should point downwards.

9.2 Power supply fuse: 20 x 5mm IEC approved 2A 250V type T

This is in a clip at the bottom edge of the power supply. If it is suspected that this fuse has blown, the unit should be returned to Deltronic Corp. for repair

9.3 Scale (linear encoder) fuse: Deltronic part number 53400105 –
2.5A type TR3 Wickmann part number 303-1250-042

This fuse is on the right-hand side of the Motherboard of the unit looking from the front and is marked F1.

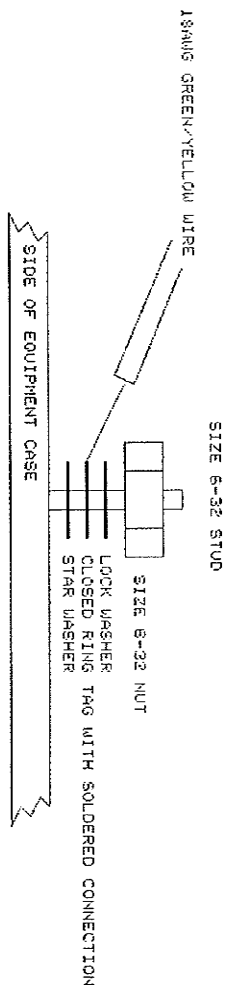
FIG. 8.4.1

FILE \SCHEM\612\CASEGND.P03

19 JAN 2005

APPROVED CASE GROUND FOR 612R

A GROUND STUD ON THE REAR PANEL OF THE 612 UNIT IS AVAILABLE TO REDUCE ELECTRICAL NOISE IF NECESSARY OR TO PROVIDE A SAFETY GROUND WHERE NO OTHER MEANS EXISTS. IN EITHER CASE THE RECOMMENDED METHOD OF CONNECTION TO THIS GROUND IS AS SHOWN BELOW.



1 March 2005

X. 612R list of accessories

20001012 612 EDGE DH/DV OPTION

21436100	EDGE ARM WITH FIBER OPTIC CABLES1	1 pc
31600100	EDGE BOARD ASSY.	1 pc
36281000	612 EDGE CABLE ASSY	1 pc