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ECT 302
Economy Isolated Convertor–DC Powered
Instruction Manual

1.0 INTRODUCTION

These instructions refer to the above model. Supplementary sheets are attached if the unit has special options or features. For detailed specifications, see page 4 or refer to the Data Bulletin. All ADTECH instruments are factory calibrated and supplied with a label detailing the calibration. Adjustments are normally not necessary. A simple check should be performed to verify calibration before installation to ensure that it matches the field requirement.

2.0 GENERAL DESCRIPTION

The ADTECH ECT 302 is an Economy Isolated Signal Transmitter that accepts process input signals such as 4-20 ma dc and converts them into a standard control signal output such as 4-20 ma dc or 1–5 vdc etc.

The input is electrically isolated from the output and the power supply by 600 volts ac or 1000 vdc peak. The output is a true current source and provides process signals such as 4-20 ma dc or alternatively, a voltage signal of 5 vdc or 10 vdc full scale. The ECT 302 is powered by 24 vdc. The negative rail of the output is common with the negative rail of the dc power supply.

3.0 INSTALLATION

The instrument is supplied in a DIN rail mount general purpose enclosure as standard. Installation area/location must agree with the supplied instruments including operating temperature and ambient conditions.

Many optional mounting configurations are provided as shown in section 10 on page 4.

Mounting

Refer to the appropriate outline drawing for mounting and clearance dimensions. The instrument is surface mounted by means of DIN rails types G or T, 32mm and 35mm respectively.

Electrical Connections

The wire used to connect the instrument to the control system **I/O** should be a twisted pair(s) and sized according to normal practice. Shielded cable is not normally necessary (if used, the shield must be grounded at the input negative of the ADTECH instrument and left floating at the sensor).

A 6 position compression terminal block is provided for **I/O** and power connection. A housing ground terminal is not required due to non-metallic housing.

Controls

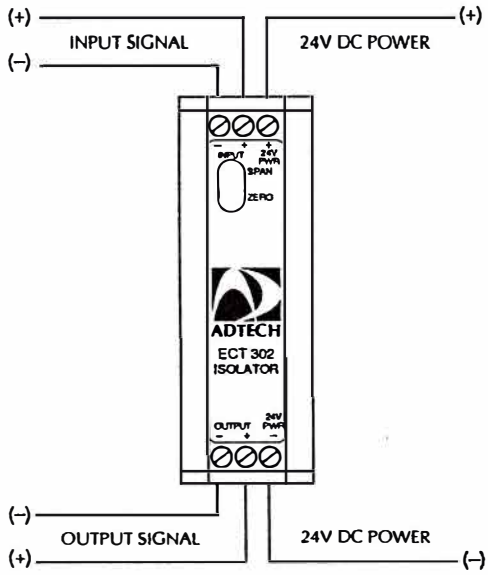
Multiturn ZERO and SPAN controls are provided to calibrate the instrument. The multiturn controls are accessible through the instrument front panel and are clearly marked for ease of use.

4.0 MAINTENANCE

These instruments are electronic and require no maintenance except periodic cleaning and calibration verification. If the unit appears to be mis-operating it should be checked as installed per section 6.0 or removed for a bench check per sections 6.0-7.0. MOST problems are traced to field wiring and/or associated circuits. If the problem appears to be with the instrument, proceed to sections 7.0.

5.0 CONNECTIONS

Standard connections are shown below and on the instrument face plate, Data Bulletin or on attached supplementary sheets.



8.0 TABLES, PCB LAYOUT

Standard Inputs/Outputs

TABLE 1
STANDARD INPUTS

INPUT	J1	J2	J3
4-20 mA DC	B	A	A
0-20 mA DC	A	A	A
1-5V DC	B	B	B
0-5V DC	A	B	B

TABLE 2
STANDARD OUTPUTS

OUTPUT	J4	J5
4-20 mA DC	A	B
0-20 ma DC	B	B
1-5V DC	A	A
0-5V DC	B	A

Alterable Inputs/Outputs

(Some pcb component changes required)

TABLE 3
ALTERABLE INPUTS

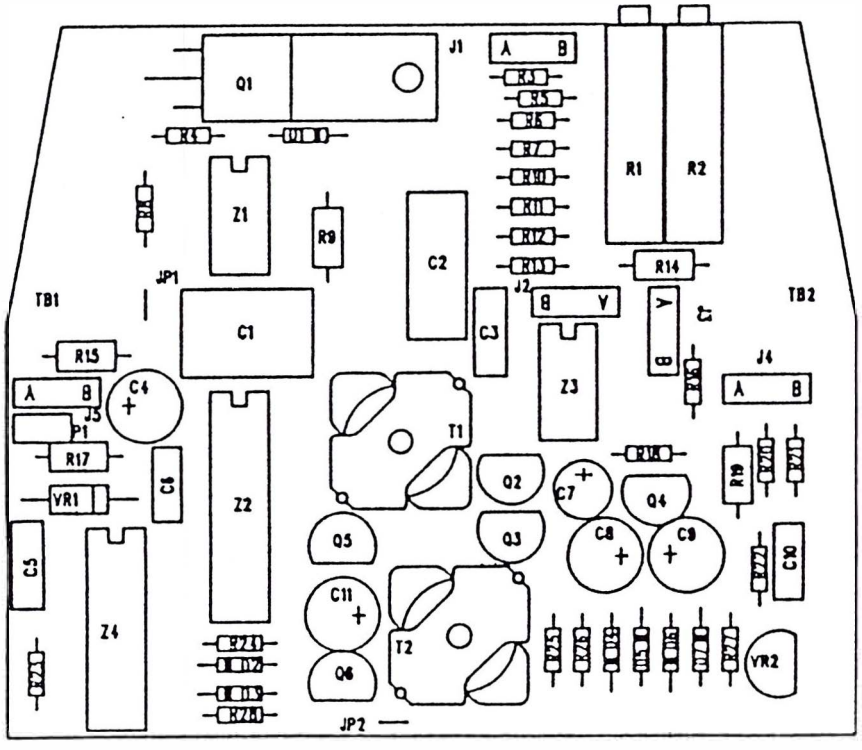
INPUT	J1	J2	J3	R16	R12
0-1 mA DC	A	A	A	200	NC
0-10 mA DC	A	A	A	20	NC
0-10 V DC	A	B	B	NC	20K

NOTE A: "NC" = No change from standard unit configuration.
NOTE B: All resitors are 1%, Metal Film, 1/4W, 50 ppm.

TABLE 4
ALTERABLE OUTPUTS

OUTPUT	J4	J5	R15	R9
0-1 mA DC	B	B	NC	1K
0-10 mA DC	B	B	NC	NC
0-10 V DC	B	A	499	NC

NOTE A: "NC" = No change from standard unit configuration.
NOTE B: All resitors are 1%, Metal Film, 1/4W, 50 ppm.



9.0 SPECIFICATIONS

INPUT/OUTPUT

INPUT SIGNALS—STANDARD

a. 4-20 mA dc (Z in 10 ohm)
b. 0-20 mA dc (Z in 10 ohm)
c. 1-5 VDC (Z in 1 meg ohm min)
d. 0-5 VDC (Z in 1 meg ohm min)

INPUT SIGNALS—ALTERABLE

a. 0-1 mA (Z in 200 ohm)
b. 0-10 mA (Z in 20 ohm)
c. 0-10 VDC (Z in 1 meg)
d. Any Zero based voltage from 100 mV to 200 VDC

OUTPUT SIGNALS—STANDARD

a. 4-20 mA DC 900 ohms max.
b. 0-20 mA DC 900 ohm max.
c. 1-5 VDC 1 meg ohm min.
d. 0-5 VDC 1 meg ohm min.

OUTPUT SIGNALS—ALTERABLE

a. 0-1 mA DC 20 k ohms max.
b. 0-10 mA DC 1800 ohm max.
c. 0-10 VDC 1 meg ohm min.

PERFORMANCE

a. **Calibrated Accuracy:** ± 0.1%
b. **Linearity:** ± 0.1% maximum, ± 0.04% typical
c. **Repeatability:** ± 0.05% maximum
d. **Temperature Stability:** ± 0.01%/°F maximum, ± 0.004%/°F typical
e. **Load Effect:** ± 0.01% zero to full load
f. **Output Ripple:** 10 mv P/P typical
g. **Response Time:** 150 milliseconds (2.3 Hz band width)
h. **Temperature Range:** 0° to 140°F (-18° to 60°C) operating
-40° to 185°F (-40° to 85°C) storage
i. **Power Supply Effect:** ± 0.05% for a ± 10% power variation
j. **Common Mode Rejection:** 100 db @ 60 Hz
k. **Isolation:** Input/output/power 600 vac, 50/60 Hz, 1000 vdc

Note: All accuracies are given as a percentage of span

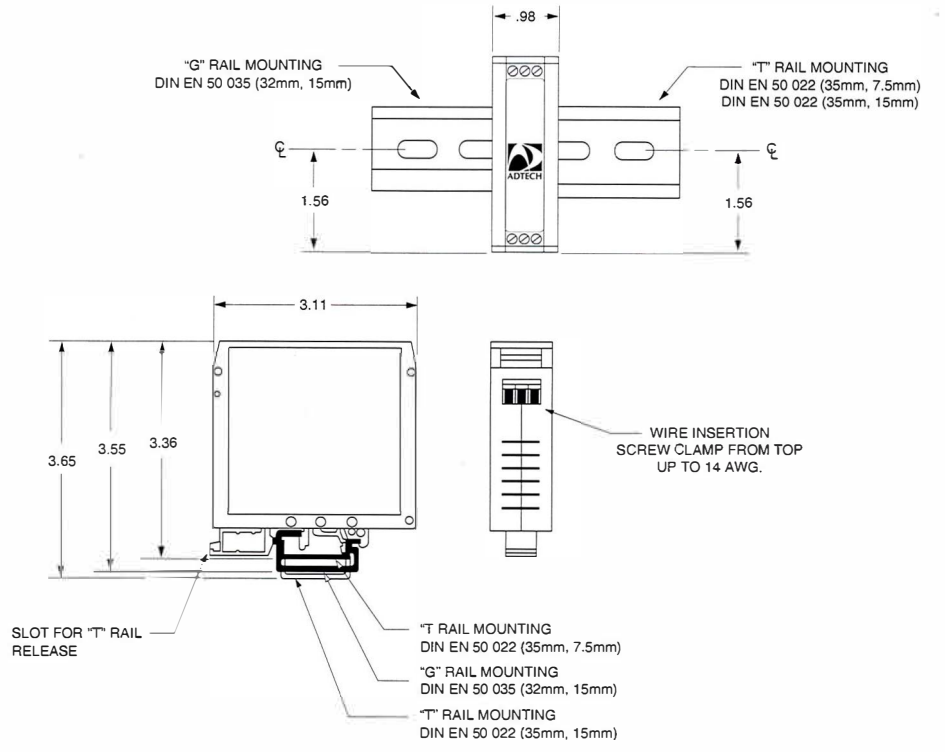
POWER

a. 24 vdc: ± 10%, 1 watt (standard)

HOUSINGS

See Section 10.0

10.0 OUTLINE & MOUNTING



OPTIONAL MOUNTINGS – see separate drawings provided or request from the factory

Option	H-15D	Explosion Proof, Class 1, Group B, C & D
Option	H-25	Snap Track Mounting (N/C (Specify)
Option	H-26	Surface Mounting N/C (Specify)
Option	H-27	NEMA 4 Enclosure
Option	H-28	T35 DIN T rail 2 Ft. Long
Option	H-28	T32 DIN G rail 2 Ft. Long