

KEPtrol F/C

Net Ratemeter & Net Totalizer

KEP

Kessler-Ellis Products Co.

Description

The KEPtrol F/C is designed to measure the net flow of boiler fuel. Separate K-Factors can be entered for A and B inputs. Two SPDT relay alarm outputs are standard. A scaled pulse output is standard for interfacing with remote devices. An analog output option is also available to interface with strip chart recorders.

Features

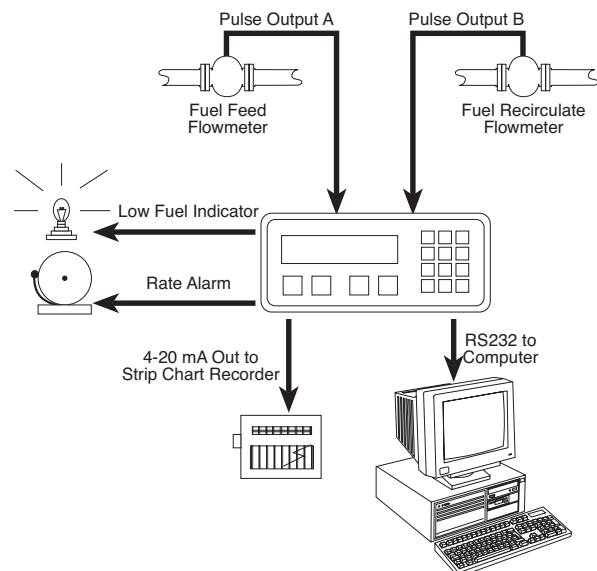
- Flow (A) - Flow (B) Displays Net Rate & Net Total
- Pulse Input to 10 kHz Count Frequency
- Separate K-Factors for A & B Inputs
- Set Point Alarms
- NEMA 4X / IP65 Front Panel



KEPtrol F/C

Typical Application

This application is a boiler fuel consumption monitor. The Unit receives pulses from Feed and Recirculating flowmeters for total and for rate. Each pulse input is scaled by separate K Factors. Pulses from B are subtracted from A to give a net rate and total. The Analog output is directed to a strip chart recorder which gives a hardcopy of the net rate. Setpoint A alarms if net rate value is exceeded. Setpoint B illuminates light when set amount of fuel is consumed. Through the serial communications, a computer keeps a record of the daily events.



kep.com

<http://www.kep.com>

KESSLER-ELLIS PRODUCTS

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Specifications

Housing:

High impact plastic case with NEMA 4X front panel.

Display:

8 Digit, 0.55" High, 15 Segment, Red Orange, LED.

Input Power:

A: 110 VAC \pm 15% or 12 to 27 VDC

B: 220 VAC \pm 15% or 12 to 27 VDC

Current:

Maximum 280 mA DC or 5.3 VA at rated AC voltage.

Output Power:

(On AC powered units only): +12 VDC at 100 mA.
Separate Isolated 12 VDC at 100 mA to allow \pm 12 VDC or +24 VDC, regulated \pm 5% worst case.

Temperature:

Operating: +32°F (0° C) to +130° F (+54° C)

Storage: -40°F (-40° C) to +200° F (+93° C)

Memory:

EEPROM stores all program and count data for a minimum of 10 years if power is lost.

Reset:

Front push button: "CLR" resets displayed number and control output.

Remote Input (Terminal 5): Open or 0 to 1 VDC (low), 3 to 30 VDC (high), 10K ohm input impedance to ground. Minimum pulse on / off time 5 msec., positive edge triggered.

Accuracy over full temperature range:

Digital - 100% (within specified voltage ranges)

Pulse Inputs:

3A: Standard. High impedance pulse input. Open or 0 to 1 VDC (low), 3 to 30 VDC (high), 10K ohm input impedance. 9980 Hz maximum speed (min. on / off 50.1 usec).

3B: Same as 3A except 4.7 K ohm pull up resistor to +5 VDC with respect to Terminal 12.

Scaled Pulse Output (Terminal 2):

NPN Open Collector; Sinks max. 100mA from a maximum of 30 VDC to a maximum 1 VDC.

Analog output:

4-20 mA (or 0-20 mA)

Sinking, (NPN transistor), Open Collector

Compliance voltage: 3 - 24 VDC, noninductive

Accuracy: \pm 100 μ A worst case

Update Rate:

Tracking Rate: follows displayed rate.

Tracking Total: approximately 5 updates per second

Control Outputs (Each of two outputs):

1. NPN Transistor Version: (Optional)

Open Collector sinks maximum of 250 mA at 30 VDC when active

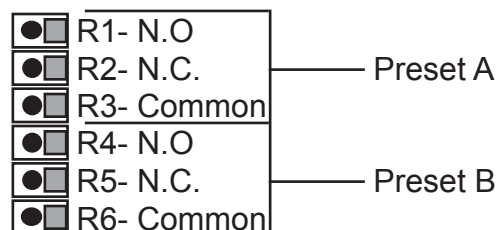
Note: When relays are used, 10 VDC is provided at transistor outputs through the relay coils. If current greater than 2 mA is drawn, the relay will remain energized. Applying greater than 10 VDC may destroy the unit. The transistor will sink 100 mA in the "ON" state with relays installed.

2. SPDT Relay Version: (Standard)

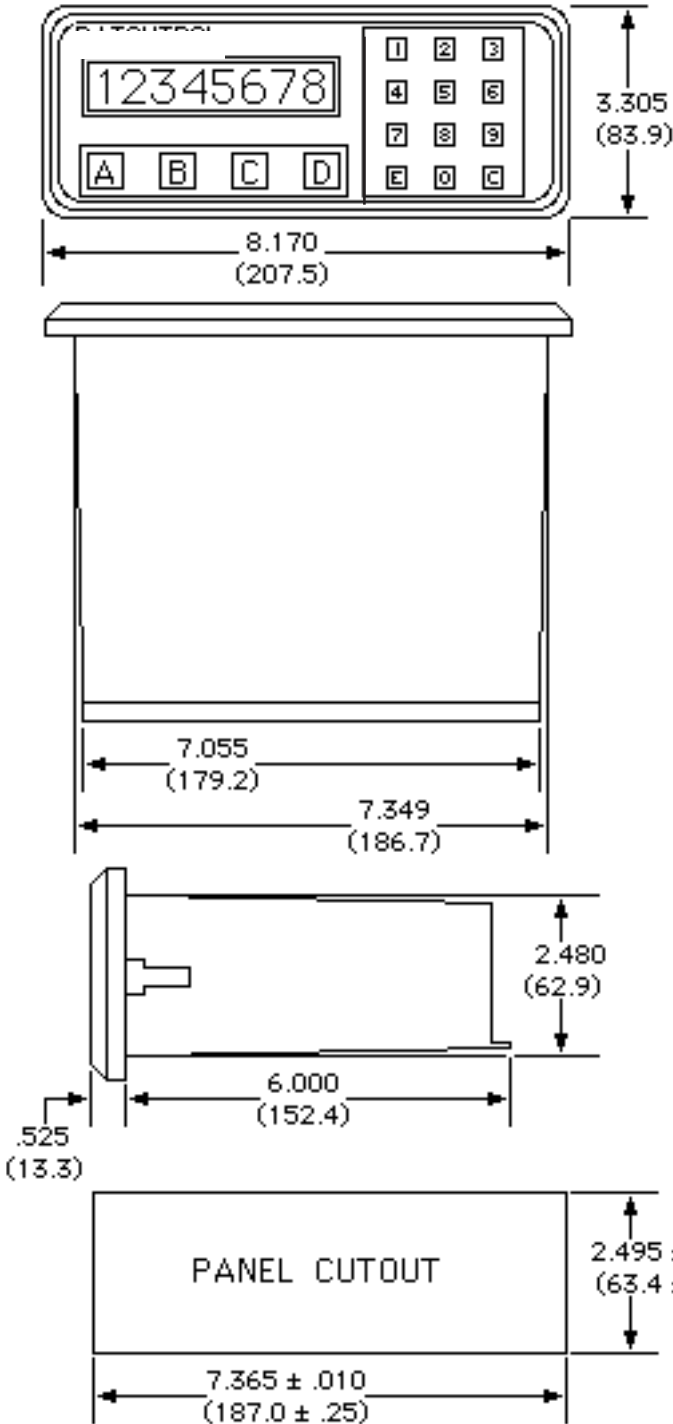
Contact rating: 10 A 120/240 VAC or 28 VDC.

Wiring:

- 1- Not Used
- 2- Scaled Pulse Output (Open Collector)
- 3- Input B
- 4- Input A
- 5- Reset Input
- 6- Not Used
- 7- Not Used
- 8- Not Used
- 9- Not Used
- 10- Analog Output (Sink)
- 11- Ground (-DC)
- 12- Ground (-DC)
- 13- (+) 12 VDC Output
- 14- (+) DC Power In
- 15- Isolated -12 Volts
- 16- Isolated +12 Volts
- 17- AC In
- 18- AC In
- 19- Preset B Transistor O.C.
- 20- Preset A Transistor O.C.



DIMENSIONS ARE IN INCHES (mm)



KEPtron F/C (KFC) Ratemeter/Totalizer

Example	KFC8	A	3A	2	E	13
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KEPtron F/C

Operating Voltage:

- A: 110 VAC \pm 15% or 12 to 27 VDC
- B: 220 VAC \pm 15% or 12 to 27 VDC

Control Inputs:

- *3A: STD Pulse 3-30 VDC 20 kHz Max.
- *3B: As 3A, with 4.7 K Ω pull up resistors

Control Outputs:

- 1: Open Collector
- 2: SPDT Relay 10A

Input Speed:

- *A: 0-40 CPS (Inputs 3A, 3B)
- *C: 0-400 CPS (Inputs 3A, 3B)
- *E: 0-10K CPS (Inputs 3A, 3B)
- *Dip switch selectable, all units can be field modified easily.

Options: (Multiple Options Available)

- 1: RS232 Serial Interface
- 2: RS422 Serial Interface
- 3: 4-20 mA Output (Input 3A or 3B only)
- 3X: 0-20 mA Output (Input 3A or 3B only)
- 3Y: 0-5VDC Output (Input 3A or 3B only)
- 3Z: 0-10VDC Output (Input 3A or 3B only)
- ET: Extended Temperature: -40° to 158°F (-40° to 70° C)
- ET not available with analog outputs**
- CSA: CSA Approved Unit (pending) (consult factory)

Accessories:

- FLEXCOVER #36120
- NEMA 4X wall mount enclosure available, see MS811
- Serial printer available, see P1000, P295
- Ethernet Port Server available, see IEPS

Figure 1-1