

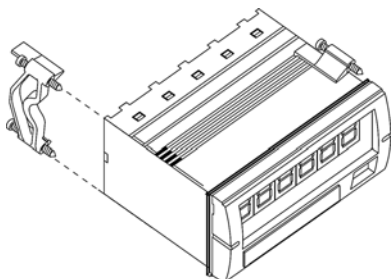
# Falcon F35 & F45 Digital Panel Meters



- 1/8 DIN Indicator
- 3-1/2 or 4-1/2 digit bright red LED display
- Front panel pops off for easy decimal point setting and display scaling
- Only 3.12" (79mm) required behind panel
- Optional excitation output
- NEMA 4X enclosure optional
- Din Rail Adapter available (page C1)

## Mounting Requirements

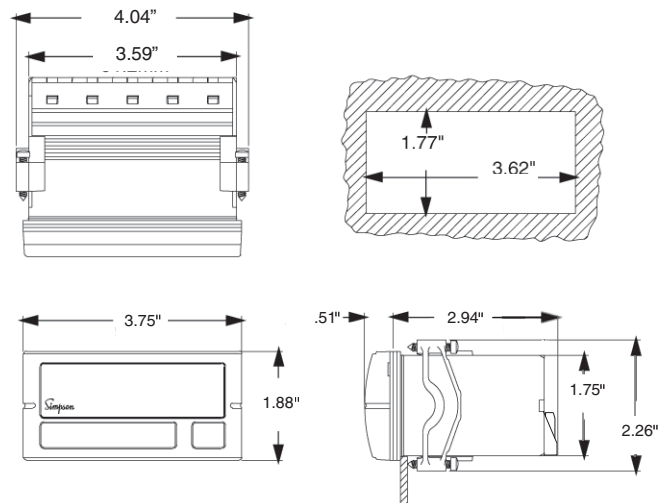
The Falcon series 1/8 DIN indicators require a panel cutout of 1.77" (45mm) high by 3.62" (92mm) wide. To install the Falcon into a panel cutout, remove the clips from the side of the meter. Slide the meter through your panel cutout, then slide the mounting clips back on the meter. Press evenly to ensure a proper fit. Tighten screws.



## Specifications

<b>DISPLAY</b>	
Type	7-segment, red LED
Height	0.56" (14.2mm)
Decimal Point	3 or 4 position user-programmable, internally or on the terminal block most significant digit = "1"; other digits blank
Overrange indication	Automatic, with "-" indication, "+" indication implied
Polarity	Automatic, with "-" indication, "+" indication implied
<b>POWER REQUIREMENTS</b>	
AC Voltages	120 or 220VAC, ±10% 50/60Hz
DC Voltages	9-32DCV, ±1%
Power Consumption	F35: 3VA, F45: 2VA
<b>ACCURACY @25°C</b>	
F45 DC Process/Voltage	±0.02% of reading ± 1 count 750 ± 2 count
F35 DC Process/Voltage	±0.1% of reading ± 1 count 750 ± 2 count
F45 DC Current	±0.05% of reading ±1 count 2A ± 5 counts 5A ± 5 counts
F35 DC Current	±0.1% of reading ± 1 count 2A ± 5 counts (45Hz-1KHz)
F45 AC Voltage/Current	±0.5% of reading ± 35 counts (45Hz-1KHz)
F35 AC Voltage/Current	±1% of reading ± 5 counts (45Hz-1KHz)
<b>ENVIRONMENTAL</b>	
Operating Temperature	0 to 55°C
Storage Temperature	-10 to 60°C
Relative Humidity	0 to 85% non-condensing
Temperature Coefficient	(±0.1% of input ± 0.5 count)/°C
Warm-up Time	Less than 15 minutes
Response Time	Less than 3 seconds
<b>NOISE REJECTION</b>	
NMRR	50dB, 50/60Hz
CMRR	(w/1KΩ unbalanced @ 60Hz) 90dB min.
<b>A TO D CONVERSION</b>	
Technique	Dual slope integration
Rate	3 samples per second, nominal
<b>MECHANICAL</b>	
Bezel	3.75" x 1.88" x .51"
Depth	2.94"
Panel Cutout	3.62" X 1.77"
Case Material	94V-1, UL rated Noryl®
Weight	9.0oz (255.1g)

## Dimensions



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# Falcon F35 & F45 Digital Panel Meters

## Specifications for F35 Frequency Meters

### DISPLAY

Type 7-segment, red LED  
Height 0.56" (14.2mm)

**Overrange indication** Most significant digit = "1"; other digits blank

### POWER REQUIREMENTS

AC Voltages 120 or 220VAC,  $\pm 10\%$  50/60Hz  
Power Consumption 2.5VA min./4VA max.

### ACCURACY @25°C

200 Hz:  $\pm 0.2\%$  of input  $\pm 0.2$  Hz  
2 KHz:  $\pm 0.2\%$  of input  $\pm 2$  Hz

### INPUT LEVEL

500mV to 750V RMS at 1.0MW impedance OR 5V to 24V Square Wave (DC offset 2V maximum)

**Resolution:** 200Hz = 0.1Hz  
2kHz = 1Hz

### ENVIRONMENTAL

Operating Temperature 0 to 55°C  
Storage Temperature -10 to 60°C  
Relative Humidity 0 to 85% non-condensing @ 40°C  
Temperature Coefficient ( $\pm 0.05\%$  of input  $\pm 0.5$  count)/°C  
Warm-up Time Less than 15 minutes  
Response Time Less than 3 seconds

### CONVERSION

Technique Frequency-to-voltage  
Rate 3 samples per second, nominal

### ACCURACY @ 25°C

F35 ACA  $\pm 1\%$  of reading  $\pm 5$  counts (45Hz - 1 kHz)  
F45 ACA  $\pm 0.5\%$  of reading  $\pm 35$  counts (45Hz - 1kHz)  
F35 ACV  $\pm 0.1\%$  of reading  $\pm 5$  counts (45Hz - 1kHz)  
F45 ACV  $\pm 0.5\%$  of reading  $\pm 35$  counts (45Hz - 1kHz)  
F35 DCA & DC Process  $\pm 0.1\%$  of reading  $\pm 1$  count  
2A  $\pm 5$  counts (45Hz - 1 kHz)  
F45 DCA  $\pm 0.05\%$  of reading  $\pm 1$  count  
2A  $\pm 5$  counts 5A  $\pm 5$  counts  
F35 DCV  $\pm 0.1\%$  of reading  $\pm 1$  count 750  $\pm 2$  counts  
F45 DCV & DC Process  $\pm 0.02\%$  of reading  $\pm 1$  count 750  $\pm 2$  counts  
F35 Frequency **200 Hz:**  $\pm 0.2\%$  of input  $\pm 0.2$ Hz  
**2kHz:**  $\pm 0.2\%$  of input  $\pm 2$ Hz

## Specifications for F45 Temperature Meters

### DISPLAY

Type 7-segment, red LED  
Height 0.56" (14.2mm)  
Decimal Point Jumper-selectable 2-position (corresponding to resolution desired)

**Overrange indication** Most significant digit = "1"; other digits blank

**Polarity** Automatic, with "-" indication, "+" indication implied

### POWER REQUIREMENTS

AC Voltages 120 or 220 ACV,  $\pm 10\%$  50/60Hz  
DC Voltages 9-32 DCV,  $\pm 1\%$   
Power Consumption 3VA

### ENVIRONMENTAL

Operating Temperature 0 to 55°C  
Storage Temperature -10 to 60°C  
Relative Humidity 0 to 85% non-condensing  
Warm-up Time Less than 20 minutes

### INPUTS

Thermocouple J, K, E, T, R, and S  
RTD Platinum 100 (.00385 alpha), 2, 3 or 4 wire  
Millivolt  $\pm 84$ mV reading of uncompensated mV  
Cold Junction Compensation Error 0.1°C/°C  
Input Impedance 10MW(typical)  
Lead Resistance Effect 4.0 $\mu$ V/100W  
Conversion Rate 2-1/2 times per second  
Open Thermocouple Detection -1 on display, -40nA bias on thermocouple

## Inputs

### DC Process

Range	Resolution	Voltage Drop	Max Input (Unfused)
4-20mA	1 $\mu$ A	0.2V	100mA
Range	Resolution	Input Impedance	Maximum Input
1-5 DCV	10mV	10 M $\Omega$	100 V
0-10DCV	10mV	10 M $\Omega$	100 V

### DC Current

Input Range	Resolution	Voltage Drop	Maximum Overload
200 $\mu$ A	10nA	200mV	20mA
2 mA	100nA	200mV	20mA
20 mA	1 $\mu$ A	200mV	100mA
200 mA	10 $\mu$ A	200mV	500mA
2 A	100 $\mu$ A	200mV	2.2A

### AC/AC TRMS Voltage

Input Range	Resolution	Input Impedance	Maximum Overload
200 mV	10 $\mu$ V	$\geq 100$ M $\Omega$	50V
2 V	100 $\mu$ V	10M $\Omega$	100V
20 V	1mV	10M $\Omega$	100V
200 V	10mV	10M $\Omega$	250V
750 V	100mV	1M $\Omega$	750V

### AC/AC TRMS Current

Input Range	Resolution	Voltage Drop	Maximum Overload
200 $\mu$ A	10nA	200mV	20mA
2 mA	100nA	200mV	20mA
20 mA	1 $\mu$ A	200mV	100mA
200 mA	10 $\mu$ A	200mV	500mA
2 A	100 $\mu$ A	200mV	2.2A
5 A	1mA	200mV	2.2A

### DC Voltage

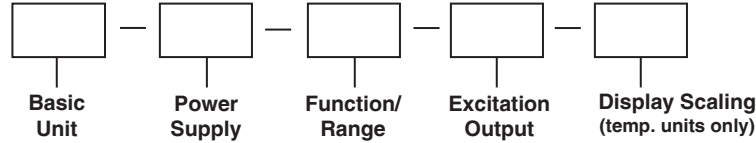
Input Range	Resolution	Input Impedance	Maximum Overload
200 mV	10 $\mu$ A	$\geq 100$ M $\Omega$	50V
2 V	100 $\mu$ A	10M $\Omega$	100V
20 V	1mV	10M $\Omega$	100V
200 V	10mV	10M $\Omega$	250V
750 V	100mV	1M $\Omega$	750V

# Falcon F35 & F45 Digital Panel Meters



## Ordering Information

Falcon Indicators can be configured by making an entry in each section. Example: F35-1-52-0.



Selection	Description	Selection	Description
<b>Basic Unit</b>		<b>Function/Range cont'd</b>	
F35	3 1/2 digit LED	61	200 AC $\mu$ A TRMS •
F45	4 1/2 digit LED	62	2 ACmA TRMS •
<b>Power Supply</b>		63	20 ACmA TRMS •
1	120 ACV	64	200 ACmA TRMS •
2	220 ACV*	65	2 ACA TRMS •
3	9-32 DCV†	66	5 ACA TRMS •
4	120 ACV*	<b>Excitation Output</b>	
<b>Function/Range</b>		<b>(not available with AC, temperature, or frequency inputs)</b>	
11	200 DCmV	71	4-20 DCmA Process
12	2 DCV	72	1-5 DCV Process
13	20 DCV	73	0-10 DCV Process
14	200 DCV	<b>Display Scaling</b>	
15	750 DCV	<b>(Temperature units only)</b>	
21	200 DC $\mu$ A	80 (F45)	J T/C
22	2 DCmA	81 (F45)	K T/C
23	20 DCmA	82 (F45)	S T/C
24	200 DCmA	83 (F45)	T T/C
25	2 DCA	84 (F45)	E T/C
26	5 DCA	85 (F45)	R T/C
31	200 ACmV	86 (F45)	DCmV
32	2 ACV	90 (F45)	RTD Pt100 Ohm
33	20 ACV	91 (F35)	20-199.9 Hz RMS
34	200 ACV	92 (F35)	20-1999 Hz RMS
35	750 ACV	93 (F35)	20-199.9 Hz Sq. Wave
41	200 AC $\mu$ A	94 (F35)	20-1999 Hz Sq. Wave
42	2 ACmA	<b>Excitation Output</b>	
43	20 ACmA	<b>(not available with AC, temperature, or frequency inputs)</b>	
44	200 AC mA	0	None
45	2 ACA	1	12 DCV @ 25mA max. current
46	5 ACA	2	24 DCV @ 25mA max. current
51	200 ACmV TRMS •	<b>Display Scaling</b>	
52	2 ACV TRMS •	<b>(Temperature units only)</b>	
53	20 ACV TRMS •	C	°C
54	200 ACV TRMS •	F	°F
55	750 ACV TRMS •		

† Not available for use with frequency meters

• Only available with F35

\* Meets CE EMI EN-50082-1, EN-55022, EN-61000-3-2, EN-61000-3-3