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 removable cover, using part # 45003**

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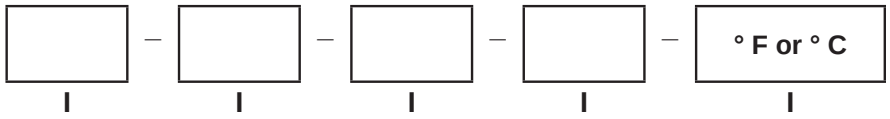
Ordering Information -

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



Select From Each One Below

Basic Unit		
	F35	3-1/2 digit LED
	F45	4-1/2 digit LED
Power Supply		
	1	120 ACV
	2	220 ACV
	3	9-32 DCV †
Function/Range		
	11	200 DCmv
	12	2 DCV
	13	20 DCV
	14	200 DCV
	21	200 DCμA
	22	2 DCmA
	23	20 DCmA
	24	200 DCmA
	25	2 DCA
	26	5 DCA
	31	200 ACmV
	32	2 ACV
	33	20 ACV
	34	200 ACV
	41	200 ACμA
	42	2 ACmA
	43	20 ACmA
	44	200 ACmA
	45	2 ACA
	46	5 ACA
	51	200 ACmV TRMS *
	52	2 ACV TRMS *
	53	20 ACV TRMS *
	54	200 ACV TRMS *

Function/Range		
	61	200 ACμA TRMS *
	62	2 ACmA TRMS *
	63	20 ACmA TRMS *
	64	200 ACmA TRMS *
	65	2 ACA TRMS *
	66	5 ACA TRMS *
	71	4-20 DCmA Process
	72	1-5 DCV Process
	73	0-10 DCV Process
	80	J T/C **
	81	K T/C **
	82	S T/C **
	83	T T/C **
	84	E T/C **
	85	R T/C **
	86	DCmV **
	90	RTD Pt100 Ohm **
	91	20-199.9 Hz RMS *
	92	20-1999 Hz RMS *
	93	20-199.9 Hz Sq. Wave *
	94	20-1999 Hz Sq. Wave *
Excitation Output		
(not available with AC, temperature, or frequency inputs)		
	0	None
	1	12 DCV @ 25mA max. current
	2	24 DCV @ 25mA max. current
Display Option Temperature Meter		
	C	° C
	F	° F

† Not available for use with frequency meters
* Only available with F35
** Only available with F45

Specifications

DISPLAY	
Type	7- segment, red LED
Height	0.56" (14.2mm)
Decimal Point	User-programmable, internally or on the terminal block
Overrange Indication	Most significant digit = "1"; other digits blank
Polarity	Automatic, with "-" indication, "+" indication implied
POWER REQUIREMENTS	
AC Voltages	120 or 220VAC, ±10% 50/60Hz
DC Voltages	9-32DCV, ±1%
Power Consumption	F35: 3VA, F45: 2VA
ISOLATION	250V RMS MAX
ACCURACY @25°C	
F45 DC Process/Voltage	±0.02% of reading ± 1 count
F35 DC Process/Voltage	±0.1% of reading ± 1 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, 5A ± 5 counts
F45 AC Voltage/Current	±0.5% of reading ± 35 counts
F35 AC Voltage/Current *	±1% of reading ± 5 counts (50Hz-100Hz) * For TRMS (45 Hz to 1KHz)
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 15 minutes
NOISE REJECTION	
NMRR	F35=50dB, 50/60Hz; F45=60dB, 50/60Hz
CMRR	(w/1KΩ unbalanced @ 60Hz) 90dB min.
A TO D CONVERSION	
Technique	Dual slope integration
Rate	F35=3 samples per second, nominal;
	F45=2.5 samples per second, nominal
MECHANICAL	
Bezel	3.78" x 1.89" x .51"
Depth	2.94"
Panel Cutout	3.62" X 1.77"
Case Material	94V-1, UL rated Noryl®
Weight	9.0oz (255.1g)
Temperature Coefficient	
F35 AC/TRMS (Voltage/Current)	(±0.1% of input ± 0.5 count)/°C
F35 DC (Voltage/Current/Process)	(±0.01% of input ± 0.05 count)/°C
F45 AC (Voltage/Current)	(±0.05% of input ± 0.5 count)/°C
F45 DC Current	(±0.01% of input ± 0.1 count)/°C
F45 DC (Voltage/Process)	(±0.05% of input ± 0.1 count)/°C

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, ±10% 50/60Hz
Power Consumption	2.5VA min./4VA max.
ACCURACY @25°C	
200 Hz	±0.2% of input ±0.2 Hz
2 KHz	±0.2% of input ± 2Hz
INPUT LEVEL	500mV to 250V RMS at 1.0MΩ impedance OR 5V to 24V Square Wave (DCoffset 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	(±0.05% of input ± 0.5 count)/°C
Warm-up Time	Less than 15 minutes
CONVERSION	
Technique	Frequency-to-voltage
Rate	3 samples per second, nominal

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 220VAC, ±10% 50/60Hz
DC Voltages	9-32 DCV, ±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	±84mV reading of uncompensated mV
Input Impedance	7MΩ(typical)
Conversion Rate	2-1/2 times per second
Open Thermocouple Detection	-1 on display, -40nA bias on thermocouple

Temperature			
Sensor Type	**Temperature Range**	**Accuracy**	**Resolution**
E	-200 to 1000°C	±0.1% of rdg ± 1°C ±0.1% of rdg ± 1.8°F	0.1 or 1 Degree User Selectable
	-328 to 1832°F		
J	-200 to 1200°C		
	-328 to 2192°F		
K	-200 to 1372°C		
	-328 to 2501°F		
T	-200 to 400°C		
	-328 to 752°F		
RTD Pt 100	-200 to 850°C		
	-328 to 1562°F		
R,S	-50 to 1768°C		1 Degree Automatic
	-58 to 3214°F		
	Voltage Range	±.02% of rdg ± 1 count	0.01 mV
	±84.00mV		
	Voltage Range	±.02% of rdg ± 1 count	0.001mV
	-19.999mV to +84.000mV		

Inputs

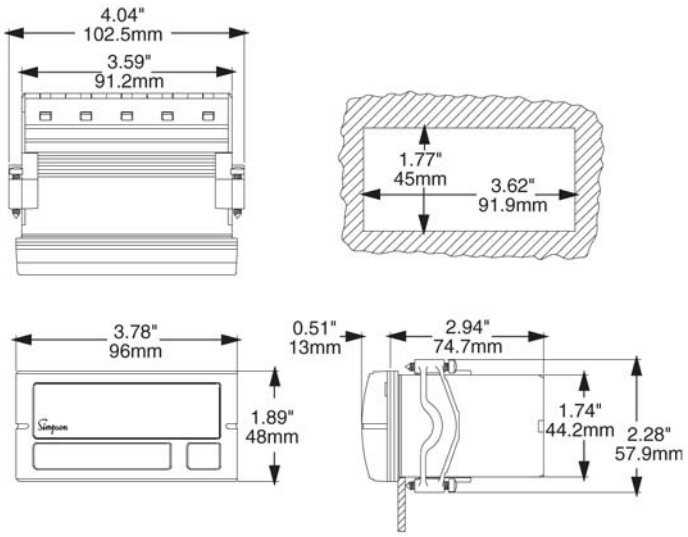
DC Voltage					
Range	F35		F45		Max Input (Unfused)
	Resolution	Input Impedance	Resolution	Input Impedance	
200mV	100µV	>100MEG	10µV	>100MEG	100V
2V	1mV	>10MEG	100µV	>10MEG	250V
20V	10mV	>10MEG	1mV	>9.9MEG	250V
200V	100mV	>9.9MEG	10mV	>9.8MEG	250V

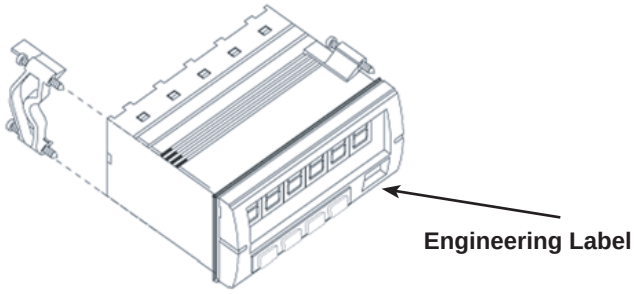
AC TRMS Voltage					
Range	F35		F45		Max Input (Unfused)
	Resolution	Input Impedance	Resolution	Input Impedance	
200mV	100µV	>100MEG	10µV	>100MEG	100V
2V	1mV	>1MEG	100µV	>1MEG	250V
20V	10mV	>10MEG	1mV	>1MEG	250V
200V	100mV	>9.9MEG	10mV	>1MEG	250V

DC / AC TRMS Current				
Range	Resolution		Voltage Drop	Max Input (Unfused)
	F35	F45		
200µA	100µA	10µA	200mV	10mA
2mA	1µA	100µA		40mA
20mA	10µA	1µA		100mA
200mA	100µA	10µA		500mA
2A	1mA	100µA		2.2A
5A	10mA	1mA		5.2A

DC Process					
Range	F35		F45		Max Input (Unfused)
	Resolution	Input Impedance	Resolution	Input Impedance	
4 to 20mA	0.1 %	10 Ohms	.01 %	10 Ohms	500mV
1 to 5Vdc	0.1 %	>10MEG	.01 %	>9.9MEG	10V
0 to 10Vdc	0.1 %	>10MEG	.01 %	>9.9MEG	10V

Installation and Panel Cutout





Mounting Requirements

The Falcon series 1/8 DIN indicators require a panel cutout of 1.77" (45mm) high by 3.62" (91.9mm) 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.

Engineering Label Placement

If replacement of the engineering unit label is required, place the tip of a ball-point pen into the small hole at the base of the engineering label in the bezel. Slide the label up until it pops out. Grasp and remove. Slide the new label half the distance in, then use the ball-point pen to slide it down into place.