

## CM-1-335 Isolated Current Input Module<sup>1</sup>

### General Description

The CM series modules are compact modular isolated signal conditioners. The modules are designed for applications in the process control industry. All modules are single channel input devices. The module is packaged in a compact 2.1" x 1.7" x 0.6" (54 mm x 42 mm x 14 mm) durable plastic case.

The module has precision voltage clamps to bound the output voltage from -0.7 to +5.7 VDC. All input pins are fully protected against 120 Vrms fault voltages.

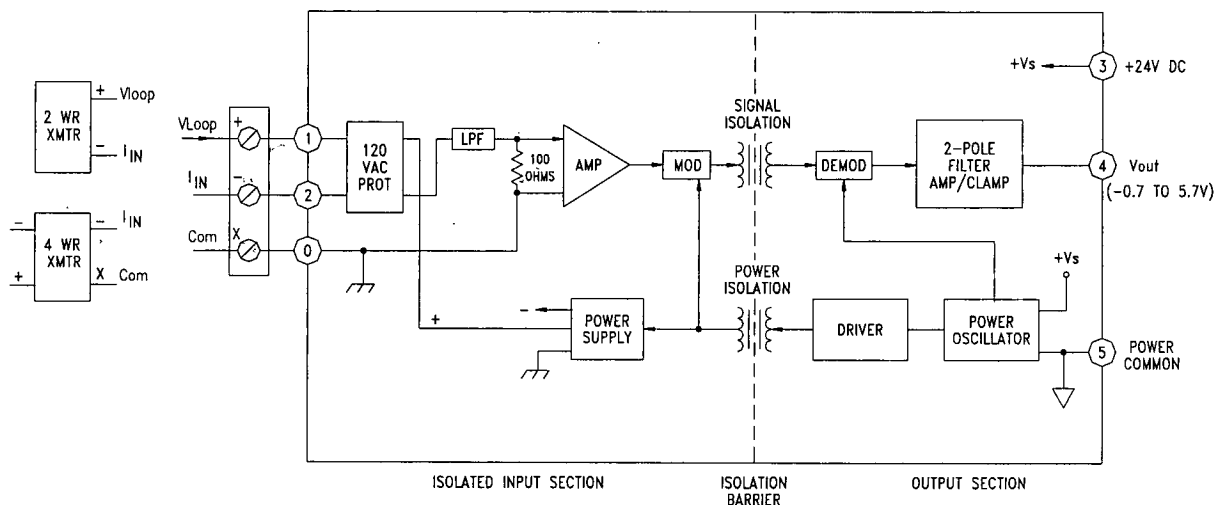
The module is mix-and-match and hot-swappable with other modules, so it can be inserted or removed from any socket in the same FTA-43 without disturbing system power.

### Isolated 2/4 Wire Transmitter Interface Module: CM-1-335

The CM-1-335 input module accepts a 4-20mA process current input, provides a standard 1-5 VDC output signal. This module features an isolated loop power supply for driving the current transmitter. The module can also be used as a current to voltage converter by supplying a 4-20 mA signal into pin 1 and returning on pin 0. The module has a nominal 3dB bandwidth of 100 Hz and has downscale open loop input detection within 5 ms.

The current input is applied into pin 1, the loop supply is available on pin 2, and the input common is brought out to pin 0.

The loop supply is nominally +24V with  $V_s = +24$  V,  $I_{loop} = 12$  mA. The loop supply will vary with loop current and  $V_s$ , the approximate output impedance of the loop supply is 250 Ohms. The loop supply (pin 2) is protected against a short to pin 0 or to pin 1.



CM-1-335

Types: Analog Devices: AD18093  
Dataforth: SCM7B35-1256

<sup>1</sup> Preliminary draft of new analog conditioning modules (3/18/99)

DEVICE SPECIFICATIONS  
 Analog Devices: AD18093 (Compressor Controls: CM-1-335)  
 (NOTES: ALL SPECIFICATIONS AT VS=+24v, Ta=+25C,  
 BASED on % of 4 V output span where applicable)  
 January 1999

<u>PARAMETER</u>	<u>SPECIFICATION</u>	<u>NOTES</u>
INPUT RANGE	4-20mA	
OUTPUT RANGE	1-5 VDC (5.3V max; 0.0V min)	2Kohm min Load Resistance
ACCURACY	0.1% max	
NON-LINEARITY	0.02% max	BSL
SPAN TEMPCO	40ppm/C	
OFFSET TEMPCO	120uV/C	
OUTPUT RESISTANCE	<1 OHM	
NOISE:		
PEAK @ 5MHz	6 mV	
RMS @ 10Hz-100KHz	0.9 mV	
PEAK @ 0.1Hz-10 Hz	4uV RTI	(Referred to input)
NOMINAL -3dB BW	100 Hz	
RESPONSE TIME	5mS	0-90%
COMMON MODE VOLTAGE	1500Vrms	Continuous
CMRR	105dB	50/60 Hz
POWER SUPPLY:		
SENSITIVITY	0.003%/Vs	
RANGE	18-35 VDC	
Iq with Vloop	60mA	
Iq w/o Vloop	25Ma	
LOOP SUPPLY:		
OPEN CKT Vloop vs Vs	Vloop= 4Vs/3	
OUTPUT RESISTANCE	Ro=250 Ohms	
INPUT PROTECTION	240Vrms 35Vdc	Continuous Continuous
OPERATING TEMP RANGE	-40C-+85C	
INPUT TRANSIENT	IEEE-STD-472 IEC-255-4 CLASS II	
ESD	IEC-801-2 LEVEL II	
RFI	<0.05%max	150MHz/440MHz @3feet
HUMIDITY	90%	Non-Condensing
WEIGHT	60 gms	