

TECHNICAL DATA SHEET

OUTSTANDING FEATURES

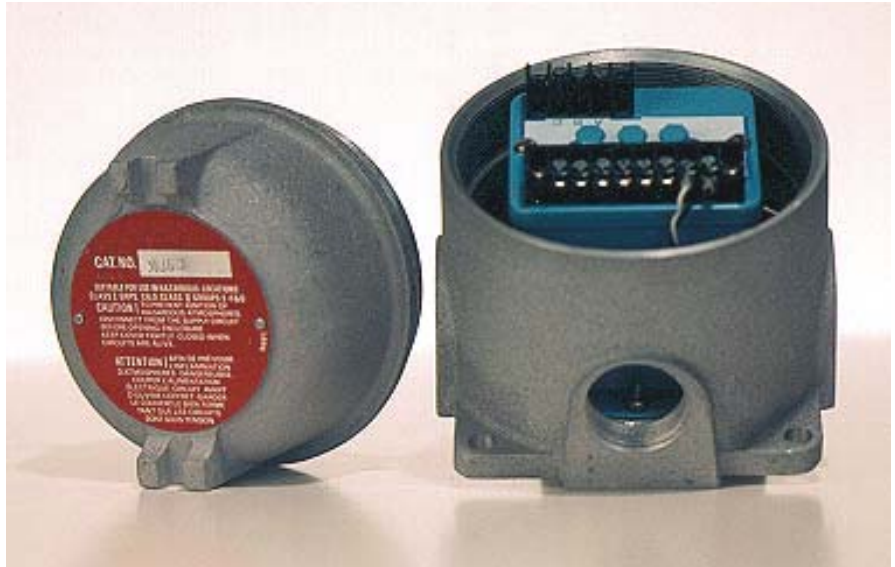
- ◆ Provides pulse and optional analog outputs.
- ◆ Compatible with modulated carrier or magnetic type pickup coils.
- ◆ Configurable pulse output options.
- ◆ Provides linearization for Hoffer Mini-Flowmeter Series.
- ◆ Field calibration capability by internal test signal.
- ◆ Tested and approved for compliance with EMC Directive 89/336/EEC.

THEORY OF OPERATION

The ACC96 is a "universal" signal conditioner available from Hoffer with the CE Mark for use in Europe. The ACC96 provides a pulse output and an optional analog current output proportional to flow rate. This unit is designed to be compatible with turbine flowmeters equipped with either magnetic or modulated carrier pickups. The modulated carrier principle eliminates the pickup coil drag in conventional magnetic pickups. This pickup significantly increases the usable range of the turbine flowmeter at lower flow rates.

The ACC96 excites the modulated carrier pickup sensed through the flowmeter body. The motion of the turbine rotor modulates the coil field. Subsequent conditioning provides a pulse output signal where each pulse is representative of a discrete volume of fluid. Pulse scaling is optionally available, for use with the Mini-Flowmeter Series only, to reduce output pulse rate where required.

The ACC96 is an economical signal conditioner which provides low-cost linearization for the Mini-Flowmeter Series. The output frequency from the Mini-Flow Series versus flow is essentially a straight line of frequency as a function of flowrate which does not pass through zero. Left uncorrected, this will result in a K-factor which varies with flow rate. The ACC96 will compensate for the frequency offset of the Mini-Flowmeters by using the Method of Offset Frequency Injection. Offset Frequency Injection is implemented by adding a signal equal to the offset frequency required to linearize the output of the Mini-Flowmeter. This effectively shifts the output characteristics to that of the desired ideal.



The optional analog output may be input to a data acquisition system, controller or may be used to drive a local indicator. The analog output signal may be transmitted several hundred feet through a shielded cable. Enclosures are available for use on or near the flowmeters. Some are suitable for explosion proof and weather proof applications.

APPLICATION OF ACC96

The ACC96 is DC powered and intended to be a companion unit to any Hoffer turbine flowmeter. In addition, the ACC96 may be used to provide linearization for any Mini-Flowmeter being operated on a liquid with a nearly constant viscosity or nearly constant pressure in the case of gas metering.

To specify the ACC96, first select the pulse input type which corresponds to the pickup coil type on the flowmeter. Next, select the pulse output form which matches the signal requirements of the host system's input card. If an analog output option is also desired, select the desired signal type or range. Pulse scaling may be used with Mini-Flowmeters only, to reduce the frequency of the pulse output signal to allow operation with low speed pulse input cards of programmable controllers. Finally, the desired enclosure type is selected to match the needs of the application environment. The system is supplied factory calibrated and configured.

SPECIFICATIONS

Input (Magnetic Pickup)	Input protected, RF and bandpass filtered. Adjustable trigger level. Input Impedance — 40K ohms (nominal). Trigger Sensitivity – 10mV RMS (minimum). 10 to 1000 Hz. Over Voltage - 120V RMS absolute (maximum).
Input (Modulated Carrier)	Compatible with the Hoffer MC3PA pickup for entire usable flow range of the flowmeter. Offset Frequency Injection.
Offset Frequency	7 to 150 Hz Thermal stability 300 PPM/°C.
Low Flow Adjustment	20 to 200 Hz (Based on comparison with input flowmeter frequency).
Input Power	15-35 VDC.

Current Output (Optional)

Accuracy ±0.05% of full scale, ±200 PPM/°C.
Range 4 to 20 mA.
Output suitable for driving grounded or floating load types.
Maximum loop resistance 375 ohms.
Response time 0.5 to 2 seconds for 10-90% (Adjustable).

Voltage Output (Optional)

Accuracy ±0.05% of full scale, ±200 PPM/°C.
Range 0 to 5V.
Impedance less than 10 ohms.
Response time 0.5 to 2 seconds for 10-90%. (Adjustable).

Pulse Outputs (Standard)

Open Collector:
Maximum OFF state voltage 60 VDC.
Maximum ON current 1.0 amps.
TTL/CMOS fanout of 10 TTL/CMOS loads.
AC Square Wave 5V p-p.
High Voltage pulse
Logic 1 10 VDC
Logic 0 0.4 VDC

Environmental

Operating Temperature 0 to 70°C.
Storage Temperature -65 to 150°C.

Enclosures

Available in Style 2H or 3H general purpose and explosion-proof.

ORDERING INFORMATION

Model ACC96 -

Coil Input

- (1) Magnetic pickup
(2) MC3PA

Pulse Output

- (1) Open Collector
(2) TTL/CMOS
(3) AC Square Wave
(4) High Voltage Pulse
(5) 0-10 V Square Wave

Analog Output

- (3) 0-5 VDC
(7) 4-20 mA

Input Power

- (D) 15-35 VDC

Linearization with Pulse Scaling (For use with Mini-flow Series only)

- (L) Switch selectable divide by 2, 4, 8, 16, 32, 64, 128 (By Factory).
Note: The linearizer is required for mini-flowmeters.

Conformité Européenne

(CE) CE Mark

Enclosure Style

(2H or 3H) Style 2H or 3H Case, General Purpose (**Assigned by factory**)
*(4H/0) Style 4 Case, Explosion Proof with water tight "O" ring. Meets Class I, Groups C & D; Class II, Groups E, F, & G; Class III.

* Suitable for optional meter mounting. Insert (X) in model number for every option not specified.

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The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specification are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

The quality system covering the design, manufacture and testing of our products is certified to International Standard ISO 9001.



ISO9001
Registered Company