



## ACC Advanced Customizable Controller

### ANALOG INPUTS

A range of input modules are available from simple single channel linear inputs to multi-channel combination modules. ACC input modules provide direct sensor connection, eliminating the need for specialized signal conditioning hardware. Examples of these include digital frequency, period and quadrature signal inputs for flow and position sensors using rotary encoders. Linear inputs are also available for temperature sensors. We are continuously developing new input modules.

Modules currently available are ...

#### AC INPUT

- AC mA/ A- scaled and RMS
- AC mV/ V- scaled and RMS
- Single Phase Power, 600V/5A

#### DC INPUT/PROCESS

- DC mA/ A (1- 3 channel 16 or 24bit, 1- 800Hz sample rate)
- DC mV/ V (1- 3 channel 16 or 24bit, 1- 800Hz sample rate)
- Single Phase Power, 600V/1-5A
- 4- 20mA with 24V DC Exc (1- 4 channel)
- Universal Process Input with auto calibration

#### TC/RTD

- Pt10/ Pt100/ Pt1000 (2, 3, 4 wire connection, 1- 4 channel)
- Dual Thermocouple

#### Resistance

- Resistance 2/3/4-Wire (1-2 channel, 24Bit)
- Resistance potentiometer (1-2 channel, 24Bit)

### **Load cell/ Pressure**

- Pressure/ Load Cell Ext Excitation. High Impedance
- Pressure/ Load Cell Ext Excitation., 4/6-wire
- Pressure/ Load Cell with AutoCal, 4-wire
- Smart Pressure/ Load Cell, High Res. (24 bit) (Absolute or Differential/Gage)

### **Special sensor input modules**

- LVDT, includes transducer excitation
- Oxidation Reduction Potential (ORP)
- pH with Automatic Temperature Compensation
- Smart Magnetostrictive Input- (magnetic flow sensor)

### **Frequency / RPM/ counter**

- Line Frequency
- Universal Freq./ RPM / Up Down Counter
- Quadrature detector

## **DIGITAL INPUTS/ OUTPUTS**

The ACC provides a range of configurable output options designed to satisfy most machine control, alarm, event, and status interconnection requirements.

Standard output options include:

- Analog outputs (mA/ V) - up to 2 channels
- Digital inputs (logic/ dry contact) - up to 128 channels
- Digital Outputs (open collector) - up to 176 channels
- Relay (5A) - up to 176 channels

## **PRODUCT SPECIFICATIONS (ACC)**

Case:	polycarbonate.
Self extinguishing degree:	according to UL 746 C.
Front protection:	CPU designed and tested to IP20 for indoor locations. DISPLAY designed and tested to IP65/ NEMA 4X for indoor locations. (test performed in accordance with IEC 529, CEI 70-1 and NEMA 250-1991 STD).
Rear terminal board:	32 screw terminals.
Dimensions	(DIN 43700): 48 x 96mm for ACC.
Weight:	350g.
Power supply (switching type):	PS1: 85-265 VAC PS2: 9-72 VDC/ 14-48V AC.
Power consumption:	PS1: 5W max. PS1: 5W max.
Insulation:	a double or reinforced insulation is guaranteed between the power supply and all the instrument inputs and outputs.
Common mode rejection ratio:	> 120dB @ 50/60Hz.
Normal mode rejection ratio:	> 60dB @ 50/60Hz.
EMC/Safety:	This instrument is marked CE. It conforms to council directives 89/336/EEC (reference harmonized standard EN 50081-2 and EN 50082-2), 73/23/EEC and 93/68/EEC (reference harmonized standard EN 61010-1).
Operating temperature:	0 to +50°C, (-5° to 70°C)* in low power operating mode
Storage temperature:	from -20 to +70°C.
Humidity:	from 20% to 95% RH not condensing.

## OPERATING SYSTEM AND MEMORY (ACC)

Processor:	32 bit with floating point math's (40MIPS).
Flash Memory:	64K, 4K for use by custom macros.
RAM:	1.25K and FeRAM 4K.
EEPROM:	Memory upgrades available to 32K for LIN Tables and 512K for data Logging and custom macros.
Registers:	6144 registers comprised of 8, 16 or 32 bit signed
Real Time Clock (option):	Year:Month:Date:Hour:Minute:Second with 15 yr Lithium battery backup.

## INPUTS (ACC)

Input accuracy:	System accuracies of better than $\pm 0.0001\%$ of reading for analog inputs using built-in compensation and linearization functions time/frequency resolution/ accuracy $\pm 0.7\text{nsec}$ . digital input and pulse counts $\pm 1$ count.
A/D Converters:	Dual Slope, bipolar 17 bit A/D or 24 bit Delta-Sigma A/D converters depending on input module.
Temperature Coefficient:	Typically $30\text{ppm}/^\circ\text{C}$ . With temp compensation to 1ppm.
Sampling Rate:	Typically 10 Hz, up to 960 Hz depending on input module.
Control Output Rate:	100msec or 10msec.
Excitation Voltage:	Typically 5V, 10V or 24VDC

## OUTPUTS (ACC)

Dual Analog Output:	Fully scalable from 0 to 10VDC
Analog Output Specifications:	Accuracy: 0.02% FS.
Resolution:	16-bit Delta-Sigma D/A, $0.4\mu\text{A}$ current scale, $250\mu\text{V}$ voltage scale
Update Rate:	Typically 7Hz
Form C Relay Specifications:	10A 240VAC~1/2 HP, 8A 24VDC
Form A Relay Specifications:	5A 240VAC, 4A 24VDC.
TTL or Open Collector:	Available with 0 to 5V (40VDC max).
Flash Card Memory Module:	Available with 8 or 16 MB memory.