IMP-895 DATA ACQUISITION SYSTEM

FEATURES:

- **Our Lowest Cost Data Logger**
- **Ideal for Small Automatic Weather Stations**
- **Internal/External Solid-State Storage**
- **Phone/Dedicated Line or built-in Radio Telemetry for 900 MHz or 2.4GHz**
- **Low Power**
- **Built-in Surge Protection**
- **Uses Same Software and Programming Instructions as the IMP-855/IMP-865**

The IMP-895 is a versatile digital data acquisition system suitable for environmental monitoring applications where only a few parameters will be measured. It can function as a stand-alone station or be operated via a computer singly or in a network.

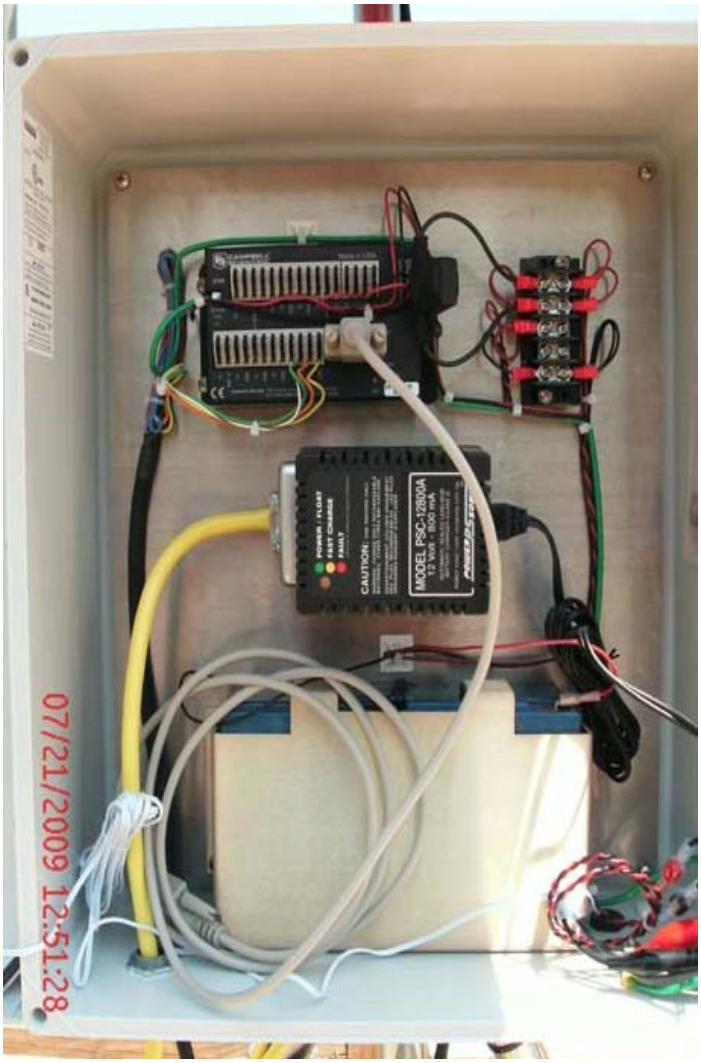
Direct sensor interface including the supply of excitation voltages is possible with the IMP-895. The input signals will then be processed as required. Data will either be stored in internal memory, removable solid-state module, or a remote computer for later processing. The solid-state storage module can be used to transport and download a new operating program.

User programming of the IMP-895 is easily accomplished via an IBM PC-compatible computer with support software or an optional, portable keyboard/display unit. A comprehensive on board instruction set is included, which can be programmed to perform calculations on any desired channel including interactions between channels. A custom operating program is factory supplied and can be modified by the user.

The basic IMP-895 (P/N 102649-G0-H0) consists of a data logger mounted in a 12 x 10x 6 inch, NEMA-4X enclosure with 128Kbytes of internal memory capable of storing up to 62,000 final data points. The G1 option provides an enclosure size of 16 x 14 x 6 inches and the G2 option is 18 x 16 x 8 inches. A rack mountable version of the IMP-895 is also available which uses only 5-1/4 x 19 inches of panel space.

The IMP-895 require a 12-volt DC power source such as our 8AH battery backup power supply (P/N 101139). When battery backup is not required, our P/N 100520-G0-H1 power supply is provided.

A large selection of communications, storage, measurement and control peripherals are available. Please contact Climatronics for a system quotation based on your specific requirement.



SPECIFICATIONS

Electrical specifications are valid over a -40° to +50°C range unless otherwise specified; non-condensing environment required. We recommend that you confirm system configuration and critical specifications with Climatronics Corporation before purchase.

ANALOG INPUTS; DIGITAL I/O

Channels SE1 to SE5 can be individually configured for single-ended measurement or digital I/O.

SINGLE-ENDED MEASUREMENT (SE1 TO SE5):

Analog Input Range: 0 ≤ V < 2.5 Vdc

Measurement Resolution: 0.6 mV

Measurement Accuracy

Typical: ±(0.25% of reading + 1.2 mV offset) over -40° to +50°C

Worst-case: ±(1 % of reading + 2.4 mV offset) over -40° to 50°C

DIGITAL I/O (SE1 TO SE5):
InpuVOutput High State: 2.1 to 3.3 Vdc InpuVOutput
Low State: <0.9 Vdc
Output High State: 3.3 V (no load)
Drive Current: 220 µA @ 2.7 Vdc
Maximum Input Voltage: 4 Vdc

HALF BRIDGE MEASUREMENTS:
Accuracy: Relative to the excitation.
Using +2.5 Vdc excitation, is ±(0.06% of reading + 2.4 mV)

PERIOD AVERAGING (SE1 TO SE4):
Maximum Input Voltage: 4 Vdc
Frequency Range: 0 to 150 kHz
Voltage Threshold: counts cycles on transition from <0.9 Vdc to >2.1 Vdc

EXCITATION CHANNELS (EX1 AND EX2):
Range: Programmable 0, 2.5, 5 Vdc, or off (floating)
Accuracy: ±25 mV on +2.5 Vdc range, ±125 mV on +5.0 Vdc range
Maximum Current: 25 mA on +2.5 Vdc range, 10 mA on +5.0 Vdc range

CONTROL PORTS (C1 AND C2)

DIGITAL I/0:
Voltage Level When Configured as Input:
<0.9 Vdc (low state) to >2.7 Vdc (high state)
Voltage Level When Configured as Output:
0 V (low state), 5 Vdc (high state) (no load)
Logic Level: TTL
Drive Current: 1.5 mA @ 4.5 V
SDI-12: SDI-12 sensors connect to Cl

PULSE COUNTERS

SWITCH CLOSURE (P _SW):
Maximum Count Rate: 100 Hz
Minimum Switch Open Time: 5 ms
Minimum Switch Closed Time: 5 ms
Maximum Bounce Time: 4 ms

PULSE COUNT (P _SW, C1, AND C2):
Voltage Threshold: count on transition from <0.9 V to >2.7 Vdc

Maximum Input Frequency: 1 kHz

Max Input Voltage: C1 & C2 (6.5 V), P _SW (4Vdc)

LOW LEVEL AC (P _LL):

Voltage Threshold: <0.5 to >2 V

Minimum Input: 20 mV RMS

Maximum Frequency: 1 kHz

Maximum Input: ±20 V

Note: P_LL, C1, & C2 can be used for switch closure using the battery voltage and a 20 kOhm pull-up resistor. If the dc offset is >0.5 V, then AC coupling is required.

COMMUNICATIONS
SERIAL INTERFACE: Female RS-232 9-pin interface for logger-to-PC communications

ON-BOARD SPREAD SPECTRUM RADIO:
Frequency: 915 MHz (IMP896), 922 MHz (IMP897), or 2.4 GHz (IMP898)
Transmission Range: 1 mile with 0 dBd ½ wave antenna (line-of-sight) and 900 MHz radios; 0.6 miles (1 km) with 0 dBd % wave antenna (line-of-sight) and 2.4 GHz radio;
up to 10 miles wilh higher gain antenna (line-of-sight)
102591 used as a base station radio

AVAILABLE RADIO TRANSMISSION MODES:
Always on, program controlled
Cycle Time: 1 or 8 s cycles; on for lOOms every period; checks for incoming communication
Scheduled Transmission Time: off until transmission time
PAKBuS® packet switching network protocol

CLOCK ACCURACY
8.2 minutes/month @ -40° to +50°C; 1 minute/month @ +25°C

CPU AND STORAGE
FINAL STORAGE: 512 kbyte Flash, data format is 4 bytes per data point (table-based)

PROGRAM STORAGE: 6.5 kbyte Flash

FASTEST SCAN RATE: once per second

SWITCHED BATTERY (SW BATTERY)
Switched under program control; 300 mA minimum current available

POWER

BATTERY VOLTAGE RANGE: 7 to 16 Vdc (can program data logger to measure internal battery voltage)

BATTERY: 12 Vdc sealed rechargeable with on-board charging circuit. Alkaline cells, lithium, or other non-rechargeable battery types may be connected if the charging circuit is not used (i.e. nothing connected to charging terminals).

CHARGER INPUT VOLTAGE: 16 to 22 Vdc

SHELF LIFE OF CLOCK'S BACKUP BATTERY:
5 years

CURRENT DRAIN (@12V)
QUIESCENT CURRENT DRAIN:
No Radio or Radio Powered Off: ~0.2 mA

ACTIVE CURRENT DRAIN:
No radio ~3 mA
Radio receive ~20 mA (IMP896, IMP897), ~36 mA (IMP898)
Radio transmit ~75 mA (IMP896,897 & 898)

AVERAGE CONTINUOUS CURRENT DRAIN:
Radio always on ~20 mA (IMP896, IMP897), ~36 mA (IMP898)
Radio in 1 s duty cycle ~2.2 mA (IMP896, IMP897), ~4 mA (IMP898)
Radio in 8 s duty cycle ~0.45 mA (IMP896, IMP897), ~0.8 mA (IMP898)

CE COMPLIANCE (as of 03/02)
CE COMPLIANT DATALOGGERS: IMP895, IMP896, IMP897, IMP898

STANDARD(S) TO WHICH CONFORMITY IS DECLARED: IEC61326:2002

EMI AND ESD PROTECTION
IMMUNITY: Meets or exceeds following standards:
ESD: per IEC 1000-4-2; ±8 kV air, ±4 kV contact discharge
RF: per IEC 1000-4-3; 3 V/m, 80-1000 MHz EFT: per IEC 1000-4-4; 1 kV power, 500 V I/O Surge: per IEC 1000-4-5; 1 kV power and 1/0 Conducted: per IEC 1000-4-6; 3 V 150 kHz-80 MHz
Emissions and immunity performance criteria available on request.

PHYSICAL
CASE DESCRIPTION: Aluminum with spring-loaded terminals

DIMENSIONS (including terminals): 5.5" x 3" x 2" (14.0 x 17.6 x 5.1 em)

WEIGHT:
CR200 or CR295: 8.5 oz (242 g) CR206, CR211, or CR216: 9.5 oz (271 g)

WARRANTY
One year covering parts and labor.

Climatronics Corporation
140 Wilbur Place
Bohemia, NY 11716-2404

TEL: 631-567-7300
FAX: 631-567-7585
E-Mail: sales@climatronics.com

Rev. 11 Nov 2009