

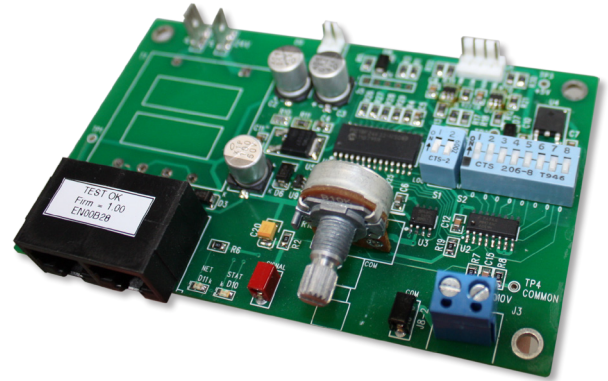
## PRODUCT DATA SHEET

### ■ Introduction

The Universal Control Card (UCC) provides multiple control input options using a single control card. Designed for use exclusively with the ENVIRCO family of MAC 10 LEDC and MAC 10 IQ Fan Filter Units, the UCC can be configured for local, remote or Building Management System control. Cleanroom facility requirements can change as facilities expand or new processes and equipment are brought in. The UCC is fully compatible with all ENVIRCO Control Console Systems and provides the flexibility to add or remove control options without the need to replace existing components.

The UCC provides three control options for the FFU; local manual control via the built in potentiometer, remote or wall mount speed control via 0-10V analog signal and networked system control via MODBUS compatible RTU Network Protocol.

The UCC is factory installed in the electrical enclosure of the FFU, eliminating the need for additional or external DC power sources.



### ■ Applications

- » For Use with MAC 10 LEDC and MAC 10 IQ Only
- » Will Provide Local Manual Speed Control for Stand Alone Operation
- » A Remote Analog Speed Control for Remote or Wall Mount Control
- » Ability to Interface to ENVIRCO Control Console and/or BMS via MODBUS Protocol

### ■ Standard Features

- » Control Interface for DC/ ECM Motor Fans (MAC 10 LEDC and MAC 10 IQ)
- » Network (MODBUS), Manual or Analog Control
- » Simple Connections
  - 4 Pin MTA for Motor Control Signals
  - RJ45 for Networking
  - 2 Pin Terminal for Analog Control
  - 2 Test Probe Jacks for DC mV Signal Output of the Following (readable by Digital Voltmeter) RPM, and Percent of Motor Torque
- » LED Diagnostics
  - Support for External LED (10mA) Remote Status Notification via 2 Pin MTA
  - Green LED for On Board Status Notification
  - Red LED to Indicate Network Traffic/Communication Status
- » Industry Standard MODBUS Networking
  - RTU Protocol
  - RS485 9600,8,n,1
- » Flexible Analog Control Options
  - Can Be Used to Transmit 0-10V Input from External Sensors (Pressure,DP,Temp) to BMS When in MODBUS
- » Powered from Local Supply
  - 24V AC
- » OEM Module
  - Open-frame PCB
  - 0-50C Operating Temperature
  - Dimensions 4.5" x 2.75" x 1.6" (114.3 x 69.85 x 40.64mm)

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■ **MODBUS Host (Master)**

A MODBUS network system requires a (single) compatible MODBUS host. In most cases, this will be an ENVIRCO Automation Console, but other MODBUS devices can be used if configured correctly. Refer to the Network Specification section of this document for more information.

■ **MODBUS Register Assignments**

See Technical Manual for MODBUS register assignments.

■ **Address DIP Switches**

Each UCC in a MODBUS network mode must be set to a unique address. The address value is set in binary using the eight DIP switches of switch bank S2. The selected addresses should be within the range supported by ENVIRCO consoles. Address switch settings are only checked by the UCC at power-up. Power must be cycled (OFF/ON) before any changes take effect. Even if an analog control mode has been selected, UCC will still respond to all MODBUS communications.

■ **Control Modes**

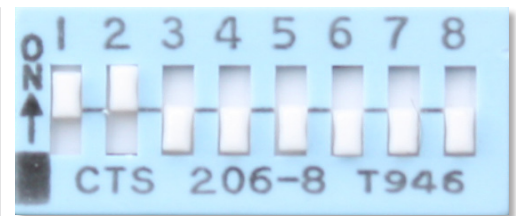
The UCC operates in one of three selectable modes:

- » Network Speed Control
- » Manual Speed Control, On-Board Potentiometer
- » Analog Speed Control, Remote 0-10V

The mode is selected using DIP Switch S1.  
Each mode is explained in detail in the technical manual.



Control Modes  
**S1**



Address DIP Switches  
**S2**