



## TECHNICAL INFORMATION

### ADVANTAGES

- Reliable microprocessor design
- Large, easily read display with selectable brightness
- Menu driven for easy operator interface
- Automatic self-test with error display
- Selectable output display in g/h, kg/h or %
- Five point calibration to match rotameter indication
- Galvanic isolation of inputs and outputs
- Protection to IP 65 in panel mounted enclosure with transparent cover
- Operation function selectable via an external input
- Diagnostic menu for assistance at installation and during maintenance
- EMC tested
- CE marked

## SCU

### SIGNAL CONDITIONING UNIT

The **Wallace & Tiernan** microprocessor based **SCU** (Signal Conditioning Unit) is designed for automatic flow pacing of chemical dosage. It provides accurate control of gas feed equipment positioners, chemical metering pump stroke positioners and variable speed drives. Solenoid operated pulse pumps can also be controlled from the **SCU**. The unit is operator friendly using a message capable LCD display and a six button keypad to allow simple set-up and calibration through menu-driven selections.



### OPERATION

An external milliamp command signal, typically flow measurement, has a dosage factor applied to it that is set by the operator, allowing dosage variations of between 20% and 400% of input. In the AUTO mode, the **SCU** adjusts the output signal based on the input signal multiplied by the set dosage rate. This can be used to control:

- A chlorinator or pump dose rate positioner
- An AC or DC variable speed pump motor
- A solenoid pulse pump.
- Stop/start variable duration operation for a constant speed pump

For positioner applications, the **SCU** provides a switched 115/230 V AC signal for operating the positioner drive motor. A precision potentiometer in the positioner supplies an accurate feedback signal to the **SCU** for exact control. The position can be displayed on the **SCU** in %. For chlorinators, the V-notch plug position can also be displayed as feed rate in g/h or kg/h.

**Any non-linearity in gas feed is compensated by a unique 5 Point Calibration Function built into the SCU.**

For pump applications, using a variable speed drive motor, a 0... 20/4 ... 20mA output signal is available from the **SCU** to control the pump speed. Operation parameters, dosage rates and all the other settings are entered using the keypad with menu guidance. There are five top level menus (**Main, Set-Up, Set I/O, Calibration & Diagnostics**) logically arranged to prompt the operator for easy selection of the individual menu steps. Settings can be protected against unauthorised changes with a user selectable security code number. In addition to the display of operational information, all alarm or error messages are displayed as long as the alarm or error conditions exist.

The operator can acknowledge the alarm, thereby cancelling the flashing alarm display. Remote control inhibit of the **SCU** can be accessed through a digital input contact. Depending on the user selection, the contact can switch off the **SCU**, drive the positioner to the minimum setting, or cause the display to blink.

### SPECIFICATION

The **SCU** is available with panel or wall mounted housings up to IP 65 protection. The unit itself is built in an enclosed metal housing, 20TE large, which can be installed in all standard 19" installation frames.

The front panel includes the keypad and the window for the LCD alphanumeric display as well as an LED to indicate automatic operation. The panel is acid and solvent resistant. The display is operator selectable for the following five languages: English, German, French, Spanish or Italian. The unit performs self tests during operation and displays any errors in full text on the LCD display. The **SCU** conforms to the EMC regulations concerned with emission and immunity. The whole unit is designed to EC regulations and carries the CE mark. The mains voltage, as well as all inputs and outputs, are connected to a 16 pole terminal block on the back of the unit. Ground protection is fixed with a screw connection to the housing.

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a U.S. Filter Company

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# TECHNICAL DATA

## SCU TYPES UXA-96188 AND UXB-96188

### Dimensions:

Front panel 102 mm x 129 mm (L x H).  
Depth including terminal block 175 mm (from front panel).

### Weight:

1.3 kg

### Protection Degree of the Enclosure:

Housing Protection

For wall mounting:  
(U-96229) IP 54

For panel mounting:  
UXB-96230 (without cover) IP 41  
UXB-96231 (with transp. cover) IP 65  
Flammability to UL94 = HB1.6

### Temperature Range:

Operation 0 ... 50 °C (non-condensing)  
Storage -20 ... 70 °C

### Mains Supply:

Type UXA-96188:  
230 V ± 10 %, 50–60 Hz  
5.5 VA, fuse T100 mA, 5 x 20 mm.  
Type UXB-96188:  
115 V ± 10 %, 50–60 Hz  
5.5 VA, fuse T200 mA, 5 x 20 mm.

### Operator Interface:

Ergonomic membrane keypad with 6 keys.  
8 character alphanumeric LCD, 11 mm high with red backlight, contrast selectable (10 % to 90 %).

### Relay Outputs, Maximum Current:

5A, 1/6 HP, 125, 250 V AC  
5A, 30 V DC, 30 W max  
1 A, 30 V DC – 0.24 A, 125 V DC.  
Shortest switch-on time 300 ms.  
Shortest switch-off time 200 ms.  
Protection with suppression diodes.

### Analogue Output A:

0 ... 20/4 ... 20/0 ... 10/0 ... 5mA  
Accuracy 0.1 % FS.  
Temperature drift maximum 0.1 % / 10 K.  
Load maximum 500 Ω.  
Galvanically insulated against earth up to 500 V.

### Analogue Input E1:

0 ... 20/4 ... 20 mA, 47 Ω, 100 V isolator

### Analogue Input E2:

For positioner transducer signal and switch for manual positioner operation potentiometer 1 KΩ (factory setting) 100 Ω, 5 KΩ, 1 V, 5 V, 0 ... 20/4 ... 20 mA selectable.

### Digital Input:

Control inhibit 230 V AC/DC, 115 V AC/DC,  
24 V AC/DC  
Galvanically insulated against earth up to 500 V.

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