

GENERAL

The MEDACS 21XX series is a range of DIN rail transmitters with a wide range of options available. This manual documents the functionality of the Medacs 21XX and Medacs 22XX. The units are available with the following output option combinations:

Pin:	OP 1	OP 2
2122	C/O relay	C/O relay
2113	Current (4-20 / 0-10 / 0-20mA)	Twin relay
2133	Twin relay	Twin relay
2211	Current (4-20 / 0-10 / 0-20mA)	Current (4-20 / 0-10 / 0-20mA)
2222	C/O relay	C/O relay
2233	Twin relay	Twin relay
2213	Current (4-20)	Twin relay

The units' performance is enhanced by the inclusion of Status' own TFML (Transfer Function Module Library). TFML was designed to make the transmitter's signal processing capabilities as flexible as possible. TFML is not documented in detail in this manual. Contact Sales for further information.

UNPACKING

Please inspect the instrument carefully for any signs of shipping damage. The packaging has been designed to afford maximum protection, however, we cannot guarantee that mishandling will not have damaged the instrument. In the case of this unlikely event, please contact your supplier immediately and retain the packaging for subsequent inspection.

EMC Approval: EN61326: 1997

Immunity: Annex A Industrial Emissions: Class A

SUPPLY: 24V ± 10%DC @ 200mA MAX PER UNIT.

AMBIENT: -30°C TO +60°C

Care must be taken when installing units into an enclosure to ensure that the above ambient range is not exceeded. Power supply units can produce heat and if possible are best mounted in a separate enclosure away from the Medacs units.

INSTALLATION

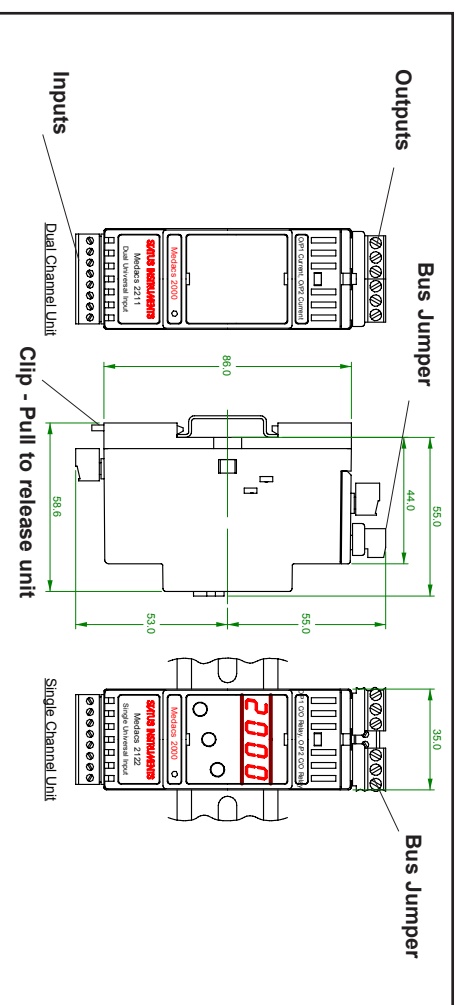
THIS SECTION FOR USE BY COMPETENT PERSONNEL ONLY

SAFETY INFORMATION

WARNING The equipment must be installed by suitably qualified personnel and mounted in an enclosure providing protection to at least IP20. The equipment contains no user serviceable parts.

ISOLATION

The 24V DC power supply and RS485 comms Bus share the same common. Isolation is provided between input, output and supply/ comms isolation voltage 500V AC RMS flash tested to 1KV DC.



WIRING

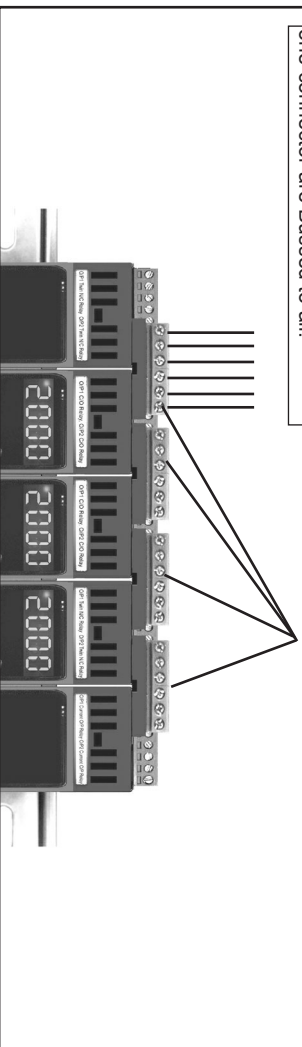
All connections are made to sockets which are removable for ease of maintenance. Installation should be undertaken in accordance with relevant sections of BS6739 - British Standards code of practice for 'Instrumentation in Process Control Systems'. Installation design and practice.

Wiring-Up Multiple Units

Medacs is provided with a unique 'BUS JUMPER' system for quick wiring of COMMS and POWER connections. To use the Bus Jumper, disconnect all power supply/comms connectors and place them so that they connect between the two units. Wiring to one connector then connects to all units.

Wires to Power and communications to one connector are Bussed to all.

'BUS JUMPER'

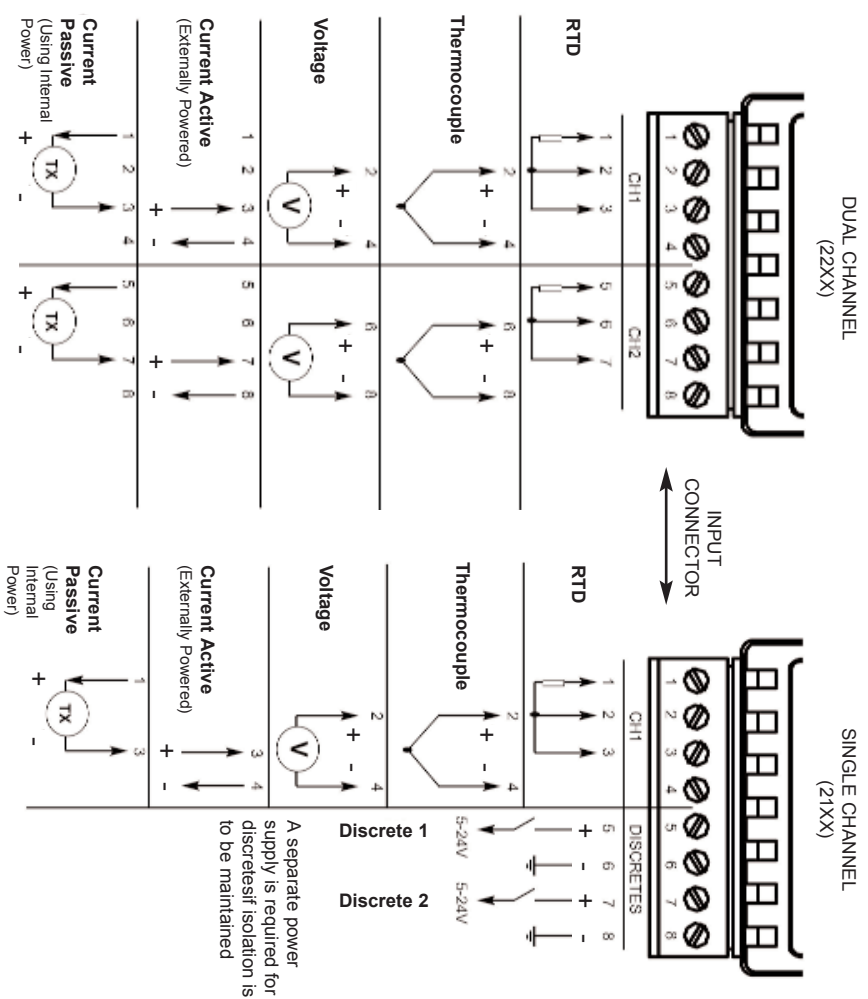


Power / Comms Connections

Ensure that the power supply is correct for the application. Over-voltage could damage the instrument. Ensure that the exposed section of the wire is fully inserted and that no loose strands are exposed.

INPUT / OUTPUT CONNECTIONS

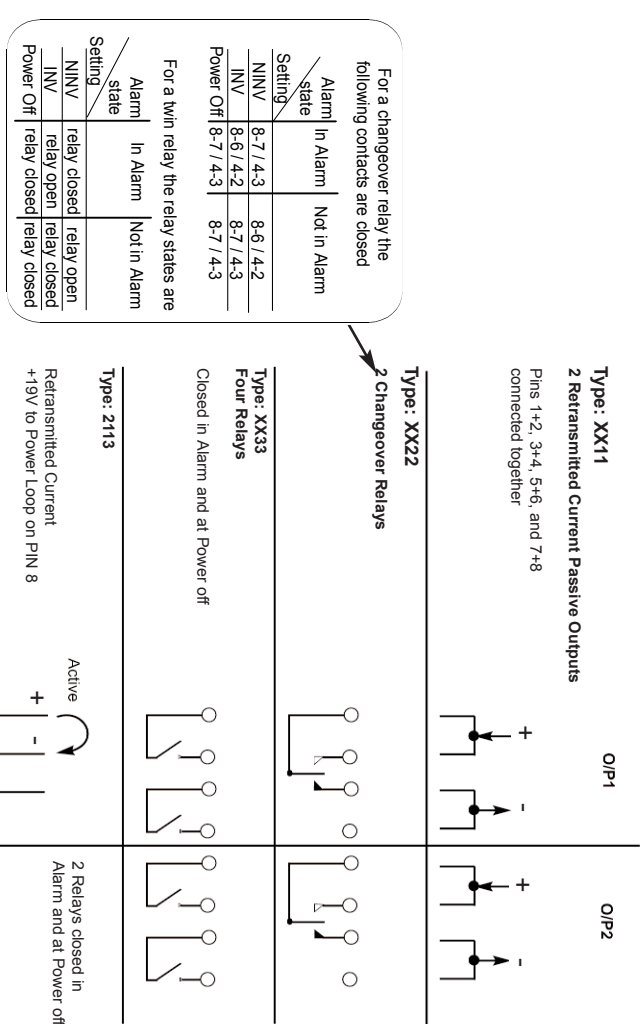
INPUT CONNECTIONS WIRING DIAGRAM



DUAL CHANNEL (21XX)

SINGLE CHANNEL (21XX)

OUTPUT CONNECTIONS WIRING DIAGRAM



Type: XX11
2 Retransmitted Current Passive Outputs
Pins 1+2, 3+4, 5+6, and 7+8 connected together

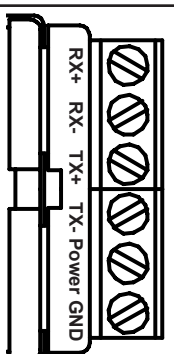
Type: XX22
2 Changeover Relays

Type: XX33
Four Relays
Closed in Alarm and at Power off

Type: 2113
Retransmitted Current
+19V to Power Loop on PIN 8

Type: 2213
Retransmitted Current Passive

'BUS JUMPER' POWER SUPPLY / COMMS WIRING DIAGRAM



MEDACS 21XX & 22XX Series Installation Guide Single Channel Universal Input Transmitter with Display Dual Channel Universal Input Transmitter

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Every effort has been taken to ensure the accuracy of this specification, however we do not accept responsibility for damage, injury, loss or expense resulting from errors or omissions and we reserve the right of amendment without notice.

Issue: A

PROGRAMMING THE INSTRUMENT

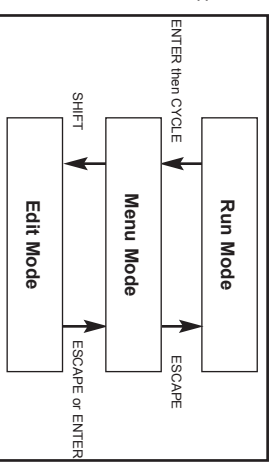
The unit is a microprocessor based instrument enabling it to satisfy a variety of applications. For single channel units, a display/ keypad allows local menu programming. For single or dual channel units, programming is available from the front panel or via a PC using the RS485 Modbus communications utility.

MENU PROGRAMMING

Operating Modes
The MEDACS has 3 operating modes. These are:

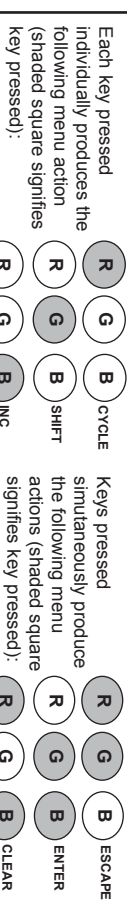
- Run Mode - Process Variable is displayed.
- Menu Mode - Enables navigation around menu structure.
- Edit Mode - Enables menu parameters to be edited.

Run mode is the principal mode of operation. The other two modes are accessed as shown in the diagram opposite. (The full menu structure is shown overlaid).



KEY PRESS DEFINITIONS

Each MEDACS unit has 3 keys (RED, GREEN & BLUE) to enable menu programming.



ENTERING MENU MODE

On power up, the unit(s) will take a few seconds to configure itself. Run mode will then automatically be entered. Menu mode is accessed from run mode by pressing ENTER followed quickly by CYCLE. The user will then be able to move around the root menu.

Navigating Around the Menu

The user can navigate around the root menu (or any sub-menu) by pressing CYCLE. Menu navigation wraps around at the end of the menu list. The items displayed in the menu can either be sub-menus, parameter lists or numbers. (See overlaid)

Entering a Sub-Menu

Pressing SHIFT enters the sub-menu or enables parameter list/number editing, depending on where the menu structure is currently being pointed. If the menu navigation is pointing at a sub-menu, the subsequent sub-menu can then be cycled around by pressing CYCLE.

EDITING A PARAMETER LIST

A parameter is selected from a list of options. The parameter option list can be cycled through by pressing INC. The user will be able to distinguish between a menu cycle action, and a parameter list cycle action by having the following 2 dynamic display styles:



Editing a Number

A number is edited by incrementing each digit in turn. The user will know which digit is currently selected for incrementing by the flashing that digit. Pressing INC will increment the digit. On overflow, the digit will wrap around to '-', '1', or '0', whichever is applicable. Pressing SHIFT will shift the currently selected digit right one place. If the number is a whole number, pressing SHIFT when the right most digit is selected will wrap the selection around to the left most digit, and the process starts again.

If the number has a decimal point, (dp), pressing SHIFT when the right most digit is selected will select the decimal point position as the editable parameter. In this case, pressing INC will shift the DP position one place to the right. If the current DP position is the right most, the DP will wrap around to the first DP position. Pressing SHIFT will select the left most digit as the editable parameter, and the process starts again.

While the display is flashing, the number/option on the display has not been saved to memory. When the desired number is in view, pressing ENTER will save it to memory. The display will stop flashing for 1 second to confirm the saved number, before returning to the previous sub-menu. Waiting for 1 minute without a key press, or pressing ESCAPE will return the user to the previous sub-menu, without saving the number.

OPERATION

See menu structure chart overlaid for the operation of the user editable settings.

SERIAL COMMUNICATIONS

Each Medacs unit has a RS485 serial communications port. The unit is supplied configured for single-drop communications for remote configuration by a PC using M-Config. The unit can be upgraded to multi-drop mode by the entry of an unlock passcode which is obtainable from your supplier.

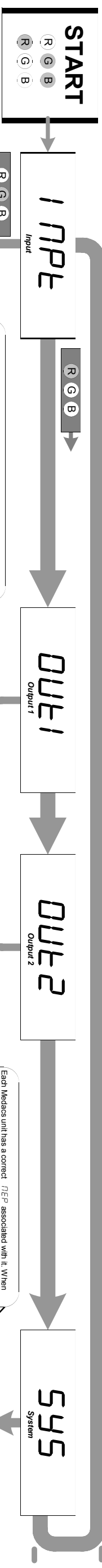
The communications port can be configured for 4 or 2 wire operation, 4 wire mode supports full duplex communication as the receive/transmit signal lines use separate wires. 2 wire mode is more efficient to connect but the receive and transmit data share the same wires and therefore only half duplex communication is supported. In 2-wire mode, the RX+/-terminals are used.

A MEDACS slave device responds to a Modbus Master request in approx. 10ms. In 4-wire mode, this poses no problem but in 2-wire mode the Master output buffer needs to be disabled in time to prevent a data clash. This direction control problem can be overcome by using an intelligent RS-232/485 converter, such as the MED 2921, which automatically sets the data direction as well as converting the RS485 to RS232 for direct connection to a PC. Contact Status for full details on all Modbus registers etc. or visit our web site www.status.co.uk

ENABLING MULTI-DROP COMMS.

All units can be programmed on a 1-1 basis from a PC running M-Config. To use in multi-drop mode you need the 'UNLOCKCODE'. In order to set the device address to anything other than device '0', contact your supplier with the device serial number to obtain the code. The unlock code is then entered from the system menu (see overlaid) or for dual channel units, via M-Config.

MENU TREE MED21XX



Key

- Disabled when menu type is short
- First menu item accessed

Key Press Definitions
Each MEDACS unit has 3 keys (A, B & C) to enable menu programming.

Each key pressed individually produces the following menu action (shaded square signifies key pressed):

- R G B Cycle
- R G B Shift
- R G B Inc
- R G B Escape
- R G B Enter
- R G B Clear

RTX Output Menu

On dual channel units (MEDACS 2XX) only 4-20mA span is available

Displayed if VOLTAGE input selected

Displayed if CURRENT input selected

RTX Output Menu

- TYPE
- SPAN
- RETRN Preset
- RETRN High
- RETRN Low
- LEVEL

When "SE" is chosen, the output current can be edited in "LEVEL". Otherwise, the retransmitted current is derived linearly from the process variable, using "RETRN" & "LEVEL".

Relay Output Menu

For a changeover relay, there is only one alarm (A). For a latching relay, there are two alarms (A & B) so the following relay sub-menu will be duplicated for alarm B.

Relay Output Menu

- SELR Setpoint A
- RCLR Alarm Action
- DELR Alarm Delay
- HYSR Hysteresis
- LCHR Latch
- INUR Relay Sense
- DEUR Deviation

The setpoint value defines the engineering value associated with an alarm.

RTD

On dual channel units (MEDACS 2XX) only 4-20mA span is available

RTD

- TYPE
- SPAN
- RETRN Preset
- RETRN High
- RETRN Low
- LEVEL

Engineering Low

Engineering Low

- ENLD
- ENHI
- BU-N Burnout
- HI
- LD

Unit

Unit

- DEGC Degree C
- DEGF Degree F

Filter

Filter

- ULIN User Linearisation
- SE95 Segments
- ENR Enter
- INI Enter Value
- QUEI Enter Value

System

System

- NEP Network Enable
- RDDR Device Address
- LINE Line
- BRUD BAUD Rate
- TYPE Type
- SETE Startup Delay
- DISC Discrete Active Level Select
- PRSS Menu Access Password
- OFFS User Offset
- ENBL Enable Submenu
- CLUP Clear Valley/Peak
- CLRE Clear Latch

Run Mode Options

Run Mode Options

- EDSP Edit Setpoints
- CLUP Clear Valley/Peak
- CLRE Clear Latch
- OFF DN
- OFF DN
- OFF DN

Alarm Behaviour

Alarm Behaviour

- DEUR Deviation
- INUR Relay Sense
- LCHR Latch
- DELR Alarm Delay
- HYSR Hysteresis
- RCLR Alarm Action
- SELR Setpoint A

Alarm Action

Alarm Action

- DEUR Deviation
- INUR Relay Sense
- LCHR Latch
- DELR Alarm Delay
- HYSR Hysteresis
- RCLR Alarm Action
- SELR Setpoint A

Alarm Function

Alarm Function

- DEUR Deviation
- INUR Relay Sense
- LCHR Latch
- DELR Alarm Delay
- HYSR Hysteresis
- RCLR Alarm Action
- SELR Setpoint A

Alarm Hysteresis

Alarm Hysteresis

- DEUR Deviation
- INUR Relay Sense
- LCHR Latch
- DELR Alarm Delay
- HYSR Hysteresis
- RCLR Alarm Action
- SELR Setpoint A

Alarm Deviation

Alarm Deviation

- DEUR Deviation
- INUR Relay Sense
- LCHR Latch
- DELR Alarm Delay
- HYSR Hysteresis
- RCLR Alarm Action
- SELR Setpoint A

Alarm Latch

Alarm Latch

- DEUR Deviation
- INUR Relay Sense
- LCHR Latch
- DELR Alarm Delay
- HYSR Hysteresis
- RCLR Alarm Action
- SELR Setpoint A

Transfer Function Module Library

Transfer Function Module Library (Registers when Enabled)

- EFM1
- EFM2
- EFM3
- EFM4
- EFM5
- EFM6
- EFM7
- EFM8

Run Mode Options

Run Mode Options

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- CLUP Clear Valley/Peak
- CLRE Clear Latch
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All programming is available from the front panel or via a PC using the RS485 Modbus communications utility. Please visit our website: www.status.co.uk for free M-Config Package downloads.