# OMEGA™

## $^1/_{16}$ - $^1/_8$ - $^1/_4$ DIN LIMIT CONTROLLERS
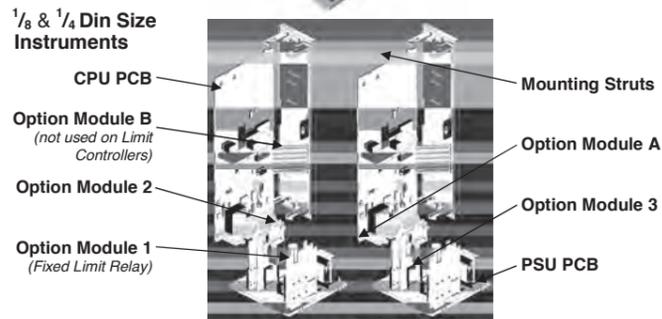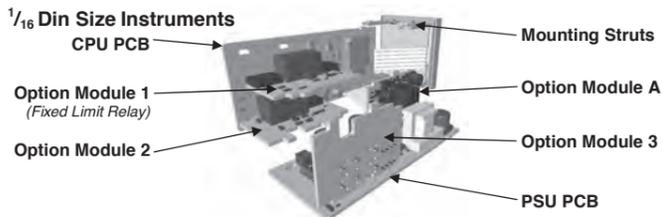## CN2516, CN2508, CN2504

⚠ **CAUTION: Installation should be only performed by technically competent personnel. Local Regulations regarding electrical installation & safety must be observed.**

## 1. INSTALLATION

The models covered by this manual have three different DIN case sizes *(refer to section 9)*. Some installation details vary between models. These differences have been clearly shown.

*Note: The functions described in sections 2 thru 8 are common to all models.*
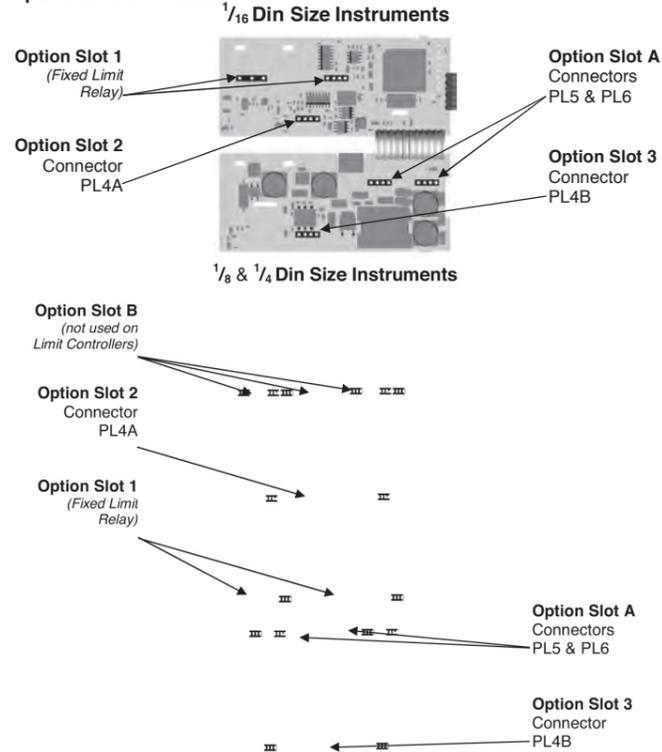
### Installing Option Modules

#### $^1/_{16}$ Din Size Instruments

CPU PCB
Option Module 1 *(Fixed Limit Relay)*
Option Module 2
Mounting Struts
Option Module A
Option Module 3
PSU PCB

#### $^1/_8$ & $^1/_4$ Din Size Instruments

CPU PCB
Option Module B *(not used on Limit Controllers)*
Option Module 2
Option Module 1 *(Fixed Limit Relay)*
Mounting Struts
Option Module A
Option Module 3
PSU PCB

*To access module A, first detach the PSU and CPU boards from the front by lifting first the upper, and then lower mounting struts. Gently separate the boards.*
a. Plug the required option modules into the correct connectors, as shown below.
b. Locate the module tongues in the corresponding slot on the opposite board.
c. Hold the main boards together while relocating back on the mounting struts.
d. Replace the instrument by aligning the CPU and PSU boards with their guides in the housing, then slowly push the instrument back into position.
*Note: Option modules are automatically detected at power up.*

### Option Module Connectors

#### $^1/_{16}$ Din Size Instruments

Option Slot 1 *(Fixed Limit Relay)*
Option Slot 2 Connector PL4A
Option Slot A Connectors PL5 & PL6
Option Slot 3 Connector PL4B

#### $^1/_8$ & $^1/_4$ Din Size Instruments

Option Slot B *(not used on Limit Controllers)*
Option Slot 2 Connector PL4A
Option Slot 1 *(Fixed Limit Relay)*
Option Slot A Connectors PL5 & PL6
Option Slot 3 Connector PL4B

## Panel-Mounting

The mounting panel must be rigid, and may be up to 6.0mm (0.25inch) thick. Cut-out sizes are:
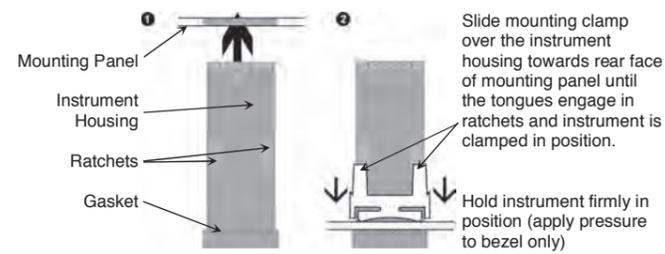
**Cut-Out Dim A**
$^1/_{16}$ & $^1/_8$ Din = 45mm
$^1/_4$ Din = 92mm

**Cut-Out Dim B**
$^1/_{16}$ Din = 45mm
$^1/_8$ & $^1/_4$ Din = 92mm
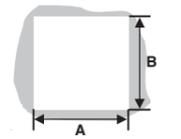
For *n* multiple instruments mounted side-by-side, cut-out A is 48*n*-4mm ($^1/_{16}$ & $^1/_8$ Din) or 96*n*-4mm ($^1/_4$ Din)

Tolerance +0.5, -0.0mm

Mounting Panel
Instrument Housing
Ratchets
Gasket

Slide mounting clamp over the instrument housing towards rear face of mounting panel until the tongues engage in ratchets and instrument is clamped in position.

Hold instrument firmly in position (apply pressure to bezel only)
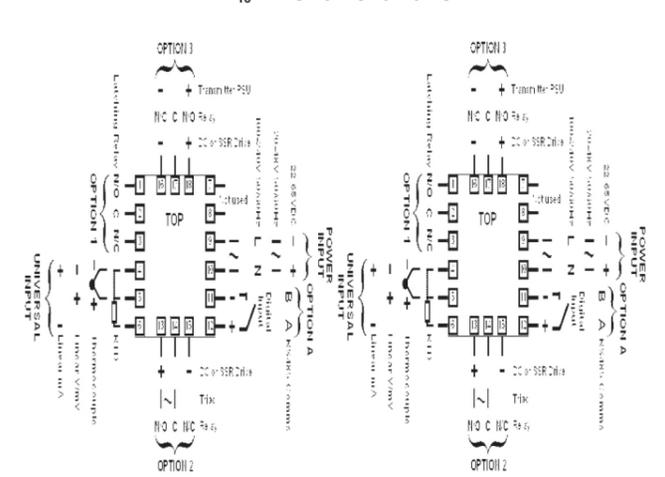
⚠ **CAUTION:** Do not remove the panel gasket; it is a seal against dust and moisture.

## Rear Terminal Wiring

**USE COPPER CONDUCTORS (EXCEPT FOR T/C INPUT)**
Single Strand wire gauge: Max 1.2mm (18SWG)

### $^1/_{16}$ Din Size Instruments

### $^1/_8$ & $^1/_4$ Din Size Instruments
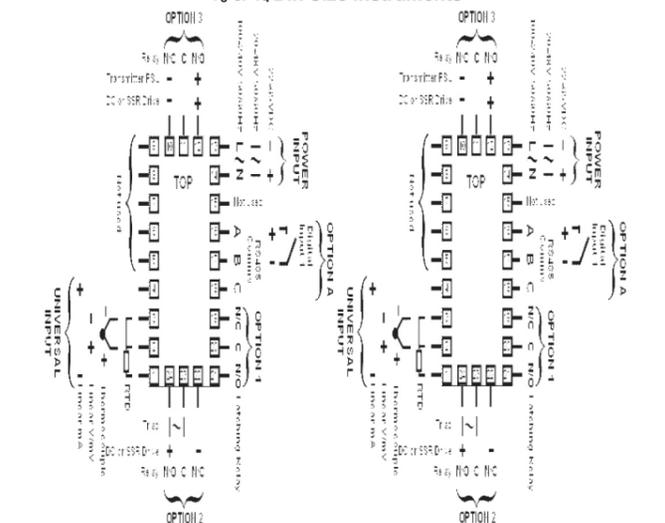
*These diagrams show all possible option combinations. The actual connections required depends on the exact model and options fitted.*

⚠ **CAUTION:** Check information label on housing for correct operating voltage before connecting supply to Power Input
Fuse: 100 – 240V ac – 1amp anti-surge
24/48V ac/dc – 315mA anti-surge

*Note: At first power-up the message ɢₒₜₒ ɕₒₙ𝖥 is displayed, as described in section 6 of this manual. Access to other menus is denied until configuration mode is completed*

## 2. SELECT MODE

Select mode is used to access the configuration and operation menu functions. It can be accessed at any time by holding down ⟳ and pressing △. In select mode, press △ or ▽ to choose the required mode, press ⟳ to enter. An unlock code is required to prevent unauthorised entry to Configuration, & Setup modes. Press △ or ▽ to enter the unlock code, then press ⟳ to proceed.

| Mode | Upper Display | Lower Display | Description | Default Unlock Codes |
|---|---|---|---|---|
| Operator | OPtr | SLCt | Normal operation | None |
| Set Up | SEtP | SLCt | Tailor settings to the application | 10 |
| Configuration | ConF | SLCt | Configure the instrument for use | 20 |
| Product Info | info | SLCt | Check manufacturing information | None |

*Note: The instrument will always return automatically to Operator mode if there is no key activity for 2 minutes.*

## 3. CONFIGURATION MODE

First select Configuration mode from Select mode *(refer to section 2)*.
Press ⟳ to scroll through the parameters, then press △ or ▽ to set the required value. Press ▦ to accept the change, otherwise parameter will revert to previous value. To exit from Configuration mode, hold down ⟳ and press △, to return to Select mode.
*Note: Parameters displayed depends on how instrument has been configured. Refer to user guide (available from your supplier) for further details. Parameters marked \* are repeated in Setup Mode.*

| Parameter | Lower Display | Upper Display | Adjustment range & Description | Default Value |
|---|---|---|---|---|
| Input Range/Type | inPt | | *See following table for possible codes* | JC |

| Code | Input Type & Range | Code | Input Type & Range | Code | Input Type & Range |
|---|---|---|---|---|---|
| bC | B: 100 - 1824 °C | LC | L: 0.0 - 537.7 °C | P24F | PtRh20% vs 40%: 32 - 3362 °F |
| bF | B: 211 - 3315 °F | LF | L: 32.0 - 999.9 °F | PtC | Pt100: −199 - 800 °C |
| CC | C: 0 - 2320 °C | nC | N: 0 - 1399 °C | PtF | Pt100: −328 - 1472 °F |
| CF | C: 32 - 4208 °F | nF | N: 32 - 2551 °F | PtC | Pt100: −128.8 - 537.7 °C |
| JC | J: −200 - 1200 °C | rC | R: 0 - 1759 °C | PtF | Pt100: −199.9 - 999.9 °F |
| JF | J: −328 - 2192 °F | rF | R: 32 - 3198 °F | 0.20 | 0 - 20 mA DC |
| JC | J: −128.8 - 537.7 °C | SC | S: 0 - 1762 °C | 4.20 | 4 - 20 mA DC |
| JF | J: −199.9 - 999.9 °F | SF | S: 32 - 3204 °F | 0.50 | 0 - 50 mV DC |
| KC | K: −240 - 1373 °C | tC | T: −240 - 400 °C | 10.50 | 10 - 50 mV DC |
| KF | K: −400 - 2503 °F | tF | T: −400 - 752 °F | 0.5 | 0 - 5 V DC |
| KC | K: −128.8 - 537.7 °C | tC | T: −128.8 - 400.0 °C | 1.5 | 1 - 5 V DC |
| KF | K: −199.9 - 999.9 °F | tF | T: −199.9 - 752.0 °F | 0.10 | 0 - 10 V DC |
| LC | L: 0 - 762 °C | P24C | PtRh20% vs. 40%: 0 - 1850 °C | 2.10 | 2 - 10 V DC |
| LF | L: 32 - 1403 °F | | | | |

*Note: Decimal point shown in table indicates temperature resolution of 0.1°*

| Parameter | Lower Display | Upper Display | Adjustment range & Description | Default Value |
|---|---|---|---|---|
| Scale Range Upper Limit | rul | | Scale Range Lower Limit +100 to Range Maximum | Range max (Lin=1000) |
| Scale Range Lower Limit | rLL | | Range Minimum to Scale Range Upper Limit -100 | Range min (Linear=0) |
| Decimal point position | dPoS | | 0=XXXX, 1=XXX.X, 2=XX.XX, 3=X.XXX (non-temperature ranges only) | 1 |
| Process Variable Offset | OFFS | | ±Span of controller *(see CAUTION note at end of section)* | 0 |
| Limit Action | CtrL | Hi | High Limit. *Limit relay is energised when process "safe" (PV < Limit Setpoint)* | Hi |
| | | Lo | Low Limit. *Limit relay is energised when process "safe" (PV > Limit Setpoint)* | |
| Setpoint Upper Limit | SPuL | | Current Setpoint to Scale Range maximum | R/max |
| Setpoint Lower Limit | SPLL | | Scale Range minimum to Current Setpoint | R/min |
| Alarm 1Type | ALA1 | P_Hi | Process High Alarm | P_Hi |
| | | P_Lo | Process Low Alarm | |
| | | dE | Deviation Alarm | |
| | | bAnd | Band Alarm | |
| | | nonE | No alarm | |
| High Alarm 1 value* | PhA1 | | Scaled Range Minimum to scaled Range Maximum in display units | Range Max |
| Low Alarm 1 value* | PLA1 | | | Range Min |
| Band Alarm 1 value* | bAL1 | | 1 LSD to span from setpoint in display units | 5 |
| Dev. Alarm 1 value* | dAL1 | | +/- Span from setpoint in display units | 5 |
| Alarm 1 Hysteresis* | AHY1 | | 1 LSD to full span in display units | 1 |

| Parameter | Lower Display | Upper Display | Adjustment range & Description | Default Value |
|---|---|---|---|---|
| Alarm 2 Type* | ALA2 | | Options as for alarm 1 | P_Lo |
| High Alarm 2 value* | PhA2 | | | Range Max |
| Low Alarm 2 value* | PLA2 | | | Range Min |
| Band Alarm 2 value* | bAL2 | | | 5 |
| Dev. Alarm 2 Value* | dAL2 | | | 5 |
| Alarm 2 Hysteresis* | AHY2 | | | 1 |
| Output 2 Usage | USE2 | LMt | Limit Output Relay | A1_d |
| | | A1_d | Alarm 1, Direct | |
| | | A1_r | Alarm 1, Reverse | |
| | | A2_d | Alarm 2, Direct | |
| | | A2_r | Alarm 2, Reverse | |
| | | Or_d | Logical Alarm 1 OR 2, Direct | |
| | | Or_r | Logical Alarm 1 OR 2, Reverse | |
| | | Ad_d | Logical Alarm 1 AND 2, Direct | |
| | | Ad_r | Logical Alarm 1 AND 2, Reverse | |
| | | An_d | Limit Annunciator, Direct | |
| | | An_r | Limit Annunciator, Reverse | |
| | | rEtS | Retransmit Limit SP Output | rEtP |
| | | rEtP | Retransmit PV Output | |
| Linear Output 2 Range | tYP2 | 0.5 | 0 to 5 V DC output 1 | 0.10 |
| | | 0.10 | 0 to 10 V DC output | |
| | | 2.10 | 2 to 10 V DC output | |
| | | 0.20 | 0 to 20 mA DC output | |
| | | 4.20 | 4 to 20 mA DC output | |
| Retransmit Output 2 Scale maximum | ro2H | | -1999 to 9999 (display value at which output will be maximum) | Range max |
| Retransmit Output 2 Scale minimum | ro2L | | -1999 to 9999 (display value at which output will be minimum) | Range min |
| Output 3 Usage | USE3 | | As for output 2 | A1_d |
| Linear Output 3 Range | tYP3 | | As for output 2 | 0.10 |
| Retransmit Output 3 Scale maximum | ro3H | | -1999 to 9999 (display value at which output will be maximum) | Range max |
| Retransmit Output 3 Scale minimum | ro3L | | -1999 to 9999 (display value at which output will be minimum) | Range min |
| Display Strategy | d.iSP | EnAb | PV is visible in Operator mode | EnAb |
| | | d.iSA | PV not visible in Operator mode | |
| | | SAFE | Displays SAFE in Operator mode when Limit Output is not active | |
| Serial Communications Protocol | Prot | ASCi | ASCII | Mbn |
| | | Mbn | Modbus with no parity | |
| | | MbE | Modbus with Even Parity | |
| | | Mbo | Modbus with Odd Parity | |
| Serial Communications Bit Rate | bAud | 1.2 | 1.2 kbps | 4.8 |
| | | 2.4 | 2.4 kbps | |
| | | 4.8 | 4.8 kbps | |
| | | 9.6 | 9.6 kbps | |
| | | 19.2 | 19.2 kbps | |
| Comms Address | Addr | | 1 to 255 (Modbus), 1 to 99 (ASCII) | 1 |
| Comms Write | CoEn | r_W | Read/Write | r_W |
| | | r_O | Read only | |
| Configuration Lock Code | CLoc | | 0 to 9999 | 20 |

*Notes: Output 1 is always a Latching Limit Relay output.*
*If Option Slot A has the Digital Input module fitted, this always functions as a Remote Reset, duplicating the function of the Reset key ▦.*

*As these functions cannot be changed, no Configuration menus are required.*

⚠ **CAUTION: Process Variable Offset can be used to modify the measured value to compensate for probe errors. Positive values increase the reading, negative values are subtracted. This parameter is effectively, a calibration adjustment and MUST be used with care. There is no front panel indication of when this parameter is in use.**

## 4. SETUP MODE

**Note:** *Configuration must be completed before adjusting Setup parameters.*
First select Setup mode from Select mode *(refer to section 2)*. The Setup LED ■ will light while in Setup mode. Press ↻ to scroll through the parameters, then press △ or ▽ to set the required value.
To exit from Setup mode, hold down ↻ and press △ to return to Select mode.
**Note:** *Parameters displayed depends on how instrument has been configured.*

| Parameter | Lower Display | Upper Display Adjustment Range & Description | Default Value |
|---|---|---|---|
| Limit Setpoint value | SP | Scaled Range Minimum to scaled Range Maximum | R/max if CtrL=Hi R/min if CtrL=Lo |
| Limit Hysteresis | HYSt | 1 LSD to full span in display units, on the safe side of the limit SP | 1 |
| Input Filter Time Constant | FiLt | OFF or 0.5 to 100.0 secs (see **CAUTION** note below) | 2.0 |
| High Alarm 1 value | PhA1 | Scaled Range Minimum to scaled Range Maximum | R/max |
| Low Alarm 1 value | PLA1 | | R/min |
| Deviation Alarm 1 Value | dAL1 | ±Span from SP in display units | 5 |
| Band Alarm 1 value | bAL1 | 1 LSD to span from setpoint | 5 |
| Alarm 1 Hysteresis | AHY1 | 1 LSD to full span in display units | 1 |
| High Alarm 2 value | PhA2 | Scaled Range Minimum to scaled Range Maximum | R/max |
| Low Alarm 2 value | PLA2 | | R/min |
| Deviation Alarm 2 Value | dAL2 | ±Span from SP in display units | 5 |
| Band Alarm 2 value | bAL2 | 1 LSD to span from setpoint | 5 |
| Alarm 2 Hysteresis | AHY2 | 1 LSD to full span in display units | 1 |
| Setup Lock Code | SLoc | 0 to 9999 | 10 |

**Note:** *Operator mode screens follow, without exiting from Setup mode.*

⚠ **CAUTION:** *An excessively large filter time could significantly delay detection of a limit condition. Set this value to the minimum required to remove noise from the process variable*

## 5. PRODUCT INFORMATION MODE

First select Product information mode from Select mode *(refer to section 2)*. Press ↻ to view each parameter. To exit from Product Information mode, hold down ↻ and press △ to return to Select mode.
**Note:** *These parameters are all read only.*

| Parameter | Lower Display | Upper Display | Description |
|---|---|---|---|
| Input type | In_1 | Uni | Universal input |
| Option 1 type *(fixed)* | OPn1 | rLY | Latching Limit Relay |
| Option 2 module type fitted | OPn2 | nonE | No option fitted |
| | | rLY | Relay output |
| | | SSr | SSR drive output |
| | | tri | Triac output |
| | | Lin | Linear DC voltage / current output |
| Option 3 module type fitted | OPn3 | nonE | No option fitted |
| | | rLY | Relay output |
| | | SSr | SSR drive output |
| | | Lin | Linear DC voltage / current output |
| | | dc24 | Transmitter power supply |
| Auxiliary Option A module type fitted | OPnA | nonE | No option fitted |
| | | r485 | RS485 communications |
| | | diGi | Digital Input for remote reset |
| Firmware type | FW | Value displayed is firmware type number |
| Firmware issue | ISS | Value displayed is firmware issue number |
| Product Revision Level | PrL | Value displayed is Product Revision level |
| Date of manufacture | dOMm | Manufacturing date code *(mmyy)* |
| Serial number 1 | Sn1 | First four digits of serial number |
| Serial number 2 | Sn2 | Middle four digits of serial number |
| Serial number 3 | Sn3 | Last four digits of serial number |

## 6. ERROR/FAULT INDICATIONS

| Parameter | Upper Display | Lower Display | Description |
|---|---|---|---|
| Instrument parameters are in default conditions | Goto | ConF | Configuration & Setup required. This screen is seen at first turn on, or if hardware configuration has been changed. Press ↻ to enter the Configuration Mode, next press △ or ▽ to enter the unlock code number, then press ↻ to proceed |
| Input Over Range | CHHJ | Normal | Process variable input > 5% over-range |
| | Normal | CHHJ | *as above if Display Strategy = SAFE* |
| Input Under Range | CLLJ | Normal | Process variable input > 5% under-range |
| | Normal | CLLJ | *as above if Display Strategy = SAFE* |
| Input Sensor Break | OPEN | Normal | Break detected in process variable input sensor or wiring |
| | Normal | OPEN | *as above if Display Strategy = SAFE* |
| Option 1 Error | | OPn1 | Option 1 module fault |
| Option 2 Error | | OPn2 | Option 2 module fault |
| Option 3 Error | Err | OPn3 | Option 3 module fault |
| Option A Error | | OPnA | Option A module fault |
| Option B Error | | OPnb | Option B not used on Limit Controllers this error is shown if any module is fitted |

## 7. OPERATOR MODE

This mode is entered at power on, or accessed from Select mode *(see section 2)*.
**Note:** *All Configuration mode and Setup mode parameters must be set as required before starting normal operations.*
Press ↻ to scroll through the parameters.

| Upper Display | Lower Display | Display Strategy and When Visible | Description |
|---|---|---|---|
| PV Value | Limit SP Value | diSP = EnAb *(initial screen)* | PV and Limit Setpoint values *Read only* |
| Limit SP Value | (Blank) | diSP = diSA *(initial screen)* | Limit Setpoint value *Read only* |
| SAFE or rSEt | (Blank) or PV Value | diSP = SAFE. *(Initial Screen)* | Displays rSEt and PV if Limit Output is active or SAFE and blank if not active. *Read only* |
| High Limit Hold | HiHd | CtrL = Hi | Highest PV value since this parameter was last reset. *To reset, press ▽ for 5 seconds, display = ---- when reset* |
| Low Limit Hold | LoHd | CtrL = Lo | Lowest PV value since this parameter was last reset. *To reset, press ▽ for 5 seconds, display = ---- when reset* |
| Exceed Time Value | ti | Always available Format mm.ss to 99.59 then mmmm.m (10 sec increments) Shows CHHJ if ≥999.9 | Accumulated time of Limit SP exceed conditions since this parameter was last reset. *To reset, press ▽ for 5 seconds, display = ---- when reset* |
| Active Alarm Status | ALSt | When one or more alarms are active. **ALM** indicator will also flash | An2 ─ Alarm 2 active / Alarm 1 active / Annunciator active |

### Exceed Condition
An Exceed Condition is when the Process Variable exceeds the Limit Setpoint value (i.e. PV > SP when set for high limit action, PV < SP for low limit action). The ■ LED is on during this condition, and is extinguished once it has passed.

### Limit Output Function
Limit Output relay(s) de-energise whenever an Exceed condition occurs, causing the process to shut down. The ■ LED is on when the relay is de-energised. The relay remains latched off even if the Exceed condition is no longer present. Only giving a reset instruction (**after** the exceed condition has passed) will re-energise the relay, allowing the process to continue. The ■ LED then turns off.

### Limit Annunciator Outputs
An Annunciator output will activate when an Exceed condition occurs, and will remain active until a reset instruction is received, or the Exceed condition has passed. Unlike the Limit Output, an Annunciator can be reset even if the Exceed condition is present. When an Annunciator is active, the ■ LED will flash and the Alarm Status screen is available.

### Resetting Limit Outputs & Annunciators
A reset instruction can be given by pressing the ■ key, via the Digital Input (if fitted) or via a Comms command if an RS485 Communications module is fitted. Annunciators will deactivate. Limit Outputs will only re-energise if the Exceed condition has passed.

⚠ **CAUTION:** *Ensure that the cause of the Exceed condition has been rectified before resetting the Limit Output.*

## 8. SERIAL COMMUNICATIONS

Refer to the full user guide (available from your supplier) for details.

## 9. SPECIFICATIONS

### UNIVERSAL INPUT
| | |
|---|---|
| Thermocouple Calibration: | ±0.1% of full range, ±1LSD (±1°C for Thermocouple CJC). BS4937, NBS125 & IEC584. |
| PT100 Calibration: | ±0.1% of full range, ±1LSD. BS1904 & DIN43760 *(0.00385Ω/Ω/°C)*. |
| DC Calibration: | ±0.1% of full range, ±1LSD. |
| Sampling Rate: | 4 per second. |
| Impedance: | >10MΩ resistive, except DC mA (5Ω) and V (47kΩ ). |
| Sensor Break Detection: | Thermocouple, RTD, 4 to 20 mA, 2 to 10V and 1 to 5V ranges only. *Limit outputs turn off (goes into Exceed condition)*, high alarms activate for thermocouple/RTD sensor break, low alarms activate for mA/V DC sensor break. |
| Isolation: | Isolated from all outputs (except SSR driver). Universal input must not be connected to operator accessible circuits if relay outputs are connected to a hazardous voltage source. Supplementary insulation or input grounding would then be required. |

### DIGITAL INPUT
| | |
|---|---|
| Volt-free(or TTL): | Open(2 to 24VDC) =No Reset. Closed(<0.8VDC) = Reset (edge triggered). |
| Isolation: | Reinforced safety isolation from inputs and other outputs. |

### OUTPUTS
**Limit Relay**
| | |
|---|---|
| Contact Type & Rating: | Latching limit control relay. Single pole double throw (SPDT); 5A resistive at 120/240VAC. Slot 1 position fixed for this function, optional function for Slot 2 & 3 relay modules, |
| Lifetime: | >100,000 operations at rated voltage/current. |
| Isolation: | Basic Isolation from universal input and SSR outputs. |

**Alarm Relays**
| | |
|---|---|
| Contact Type & Rating: | Slot 2 or 3 position non-latching alarm relay. Single pole double throw (SPDT); 2A resistive at 120/240VAC |
| Lifetime: | >500,000 operations at rated voltage/current. |
| Isolation: | Basic Isolation from universal input and SSR outputs. |

**SSR Driver**
| | |
|---|---|
| Drive Capability: | SSR drive voltage >10V into 500Ω min. |
| Isolation: | Not isolated from universal input or other SSR driver outputs. |

**Triac**
| | |
|---|---|
| Operating Voltage: | 20 to 280Vrms (47 to 63Hz). |
| Current Rating: | 0.01 to 1A (full cycle rms on-state @ 25°C ); derates linearly above 40°C to 0.5A @ 80°C. |
| Isolation: | Reinforced safety isolation from inputs and other outputs. |

**DC**
| | |
|---|---|
| Resolution: | 8 bits in 250mS (10 bits in 1s typical, >10 bits in >1s typical). |
| Isolation: | Reinforced safety isolation from inputs and other outputs. |

**Transmitter PSU**
| | |
|---|---|
| Power Rating: | 20 to 28V DC (24V nominal) into 910Ω minimum resistance. |
| Isolation: | Reinforced safety isolation from inputs and other outputs. |

### SERIAL COMMUNICATIONS
| | |
|---|---|
| Physical: | RS485, at 1200, 2400, 4800, 9600 or 19200 bps. |
| Protocols: | Selectable between Modbus and West ASCII. |
| Isolation: | Reinforced safety isolation from all inputs and outputs. |

### OPERATING CONDITIONS (FOR INDOOR USE)
| | |
|---|---|
| Ambient Temperature: | 0°C to 55°C (Operating), –20°C to 80°C (Storage). |
| Relative Humidity: | 20% to 95% non-condensing. |
| Supply Voltage and Power: | 100 to 240VAC ±10%, 50/60Hz, 7.5VA *(for mains powered versions)*, or 20 to 48VAC 50/60Hz 7.5VA or 22 to 65VDC 5W *(for low voltage versions)*. |

### ENVIRONMENTAL
| | |
|---|---|
| Standards: | CE, FM 3545, 1998 |
| EMI: | Complies with EN61326 (Susceptibility & Emissions). |
| Safety Considerations: | Complies with EN61010-1. Pollution Degree 2, Installation Category II. |
| Front Panel Sealing: | To IP66 (IP20 behind the panel). |

### PHYSICAL
| | |
|---|---|
| Front Bezel Size: | $^1/_{16}$ Din = 48 x 48mm, $^1/_8$ Din = 96 x 48mm, $^1/_4$ Din = 96 x 96mm. |
| Depth Behind Panel: | $^1/_{16}$ Din = 110mm, , $^1/_8$ & $^1/_4$ Din = 100mm. |
| Weight: | 0.21kg maximum. |

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☑ Industrial Water & Wastewater Treatment
☑ pH, Conductivity & Dissolved Oxygen Instruments

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