# MLC 9000+ LOOP CONTROLLER MODULE INSTALLATION MANUAL 59326-3

CAUTION: Installation should be only performed by technically competent personnel. It is the responsibility of the installing engineer to ensure that the configuration is safe. Local regulations regarding electrical installation & safety must be observed - e.g. US National Electrical Code (NEC) and/or Canadian Electrical Code. Impairment of protection will occur if the product is used in a manner not specified by the manufacturer.

1. INSTALLATION - MECHNICAL

### 1.1 GENERAL DESCRIPTION

The MLC 9000+ System - comprising one or more Bus Modules each with up to eight Loop Modules - is designed for installation in an enclosure which is sealed against the ingress of dust and moisture. The enclosure must contain sufficient length of 35mm Top-Hat DIN mounting rail to accommodate the system modules (see below) plus an extra 50mm of rail to permit modules to be separated for removal/replacement. The space required by the MLC 9000+ modules is shown below.



**NOTE:** An additional 60mm of space is required above and below the system modules to permit ventilation and to accommodate wiring bend radii to enclosure trunking or conduits. Allow sufficient slack in all cables inside the trunking to permit "hot" swapping of modules (i.e. modules to be removed/replaced whilst the system is under power).



WARNING: The maximum of eight Loop Module's per Bus Module must not be exceeded.

It is recommended that (a) some means of preventing unauthorised access to the enclosure interior (e.g. lockable doors) is provided, and (b) that a suitable DIN rail clamp be used, once the MLC 9000+ system is fully installed, to prevent the system from moving on the DIN rail.

#### 1.2 VENTILATION

Under normal circumstances, no forced ventilation is required and the enclosure need not contain ventilation slots, but temperatures within the enclosure must be within specification.

#### 1.3 INSTALLING A LOOP MODULE

The MLC 9000+ system is installed in the following order:

- 1. Bus Communications Module (refer to Bus Module installation instructions)
- 2. Interconnect Module(s)
- 3. First Loop Controller Module
- 4. Second Loop Controller Module
- 5. Third Loop Controller Module etc.....

To install the Loop Module follow the instructions below:

#### CAUTION: HOT SWAPPING OF LOOP CONTROLLER MODULES.

Although hot swapping of Loop Modules is possible, caution must be exercised in order to eliminate the risk of receiving an electric shock due to the possibility of up to 240VAC being present at the relay terminals of an Loop Module. Before removing any connectors from a Loop Module, please ensure that all hazardous voltages have been isolated from the appropriate connectors.



Figure 1 Installing an Interconnect Module

#### 1.3.2 Installing a Loop Module



#### Figure 2 Installing a Loop Module

- 1.4 REMOVING A LOOP MODULE
- 1.4.1 Removing a Loop Module







#### 2.1 Installation Considerations

Ignition transformers, arc welders, mechanical contact relays and solenoids are all common sources of electrical noise in an industrial environment and therefore the following guidelines MUST be followed.

- 1. If the instrument is being installed in existing equipment, the wiring in the area should be checked to ensure that good wiring practices have been followed.
- Noise-generating devices such as those listed should be mounted in a separate enclosure. If this is not possible, separate them from the instrument, by the largest distance possible.
- If possible, eliminate mechanical contact relays and replace with solid-state relays. If a
  mechanical relay being powered by an output of this instrument cannot be replaced, a
  solid-state relay can be used to isolate the instrument.
- 4. Do not run signaling cables adjacent to power-carrying conductors. If the wiring is run in a conduit, use a separate conduit for the signal wiring. Use of shielded cable is recommended and this must be grounded at one point only.

#### 2.2 Noise Suppression at Source

Usually when good wiring practices are followed, no further noise protection is necessary. Sometimes in severe electrical environments, the amount of noise is so great that it has to be suppressed at source. Many manufacturers of relays, contactors etc supply 'surge suppressors' which mount on the noise source. For those devices that do not have surge suppressors supplied, Resistance-Capacitance (RC) networks and/or Metal Oxide Varistors (MOV) may be added.



Inductive coils - MOVs are recommended for transient suppression in inductive coils, connected in parallel and as close as possible to the coil. Additional protection may be provided by adding an RC network across the MOV.

Contacts - Arcing may occur across contacts when they contact open and close. This results in electrical noise as well as damage to the contacts. Connecting a properly sized RC network can eliminate this arc.

For circuits up to 3 amps, a combination of a 47 ohm resistor and 0.1 microfarad capacitor (1000 volts) is recommended. For circuits from 3 to 5 amps, connect two of these in parallel.

#### 2.3 Thermocouple Inputs

The correct type of extension leadwire/compensation cable must be used for the entire distance between the Loop Module connector and the thermocouple; correct polarity must be observed throughout and joints in the cable should be avoided. If the thermocouple is grounded, this must be done at one point only. If the thermocouple extension leadwire is shielded, this shield must also be grounded at one point only.

#### 2.4 RTD Inputs

The extension leads should be of copper and the resistance of the wires connecting the resistance element should not exceed 50.0 per lead (the leads should be of equal resistance). For three wire RTDs, connect the resistive leg and the common legs of the RTD as illustrated. For a two wire RTD a wire link should be used in place of the third wire. Two wire RTDs should only be used when the leads are less than 3 metres long. Avoid cable joints.

## 2.5 Heater Current Input

For single loop modules with a heater current input the main heater conductor should be passed through a current transformer (CT) the secondary should then be connected to the input terminals of the Loop Module. A value of CT should be selected so that the secondary has a maximum current value of 50mA.

For multiple loop modules with a heater current input a single CT is used. Each of the main heater conductors is passed through the single CT. The value of CT needs to be calculated to be able to withstand the maximum current in all three conductors at the same time. If a CT can not be found that is of sufficient size then one of the conductors can be passed through the CT in the opposite direction to the other two this has the effect of cancelling out one of the other conductors and as such reducing the secondary current.

Current Transformers available from your local supplier:

25:0.05	part number 85258
50:0.05	part number 85259
100:0.05	part number 85260



Figure 7

# 3. LOOP MODULE SPECIFICATIONS

	GENEI	RAL	
Function	Each Loop Module pe	erforms the control functions a connections for its own control	and provides
	to 4 universal process on model variant)	s inputs and up to 6 outputs. (	dependent
Types Available	Z1200: One Universa	l input, two SSR/relay outputs	6
	(selectable)		
	Z1300: One Universa	l input, two SSR/relay outputs	and one
	Linear output or three	SSR/relay outputs (selectabl	e)
	SSR/relay outputs an	d one Linear or three SSR/rel	av outouts
	(selectable)		ay outputs
	Z3611: Three Univers	al inputs, one Heater Break in	nput, six
	relay outputs		
	Z3621: Three Univers	al inputs, one Heater Break in	nput, six
	SSR outputs	al inputa, and Haatar Brook is	anut three
	SSR outputs and three	e Relay outputs	iput, tillee
	Z4610: Four Universa	l inputs, six relay outputs	
	Z4620: Four Universa	I inputs, six SSR outputs	
	Z4660: Four Universa	I inputs, four SSR outputs an	d two Relay
Des ses s la mut	outputs		
Process input	Type and scale user s	selectable (see Process Input	s table)
Heater Current	Measures a Heater ci	irrent value via an external C	T for use by
Input	the Heater Break Alar	m function.	
	PROCESS	INPUTS	
Турез	PROCESS available (Range Min	INPUTS imum – Range Maximum)	
Types Therm	PROCESS s available (Range Min occuple	INPUTS imum – Range Maximum) RTD RT400 ( 100 0 - 900 2°C)	DC Linear
Types Therm B (100 – 1824°C) B (212 – 3315°F)	PROCESS s available (Range Min ocouple N (0.0 – 1399.6°C) N (32.0 – 2551.3°F)	INPUTS imum – Range Maximum) RTD PT100 (-199.9 – 800.3°C) PT100 (-327.3 – 1472.5°F)	DC Linear 0 – 20mA 4 – 20mA
Types Therm B (100 – 1824°C) B (212 – 3315°F) J (-200.1 – 1200.3°C) J (-328.2 – 2192.5°F)	PROCESS s available (Range Min ocouple N (0.0 – 1399.6°C) N (32.0 – 2551.3°F) R (0 – 1759°C) R (32 – 3198°F)	INPUTS imum – Range Maximum) RTD PT100 (199.9 – 800.3°C) PT100 (-327.3 – 1472.5°F) NI 120 (-80.0 – 240.0°C) NI 120 (-112.0 – 464.0°F)	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV
Types           Therm           B (100 - 1824°C)           B (212 - 3315°F)           J (-200.1 - 1200.3°C)           J (-328.2 - 2192.5°F)           K (-240.1 - 1372.9°C)           K (-200.2 - 2592.3°E)	PROCESS s available (Range Min occuple N (0.0 - 1399.6°C) N (32.0 - 2551.3°F) R (0 - 1759°C) R (32 - 3198°F) S (0 - 1759°C) S (0 - 1759°C)	INPUTS imum – Range Maximum) RT0 PT100 (1919 – 800.3°C) PT100 (-327.3 – 1472.5°F) NI 120 (-80.0 – 240.0°C) NI 120 (-112.0 – 464.0°F)	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 0 - 5V
Types Therm B (100 - 1824°C) B (212 - 3315°F) J (-200.1 - 1200.3°C) J (-328.2 - 2192.5°F) K (-240.1 - 1372.9°C) K (-400.2 - 2503.2°F) L (-0.1 - 761.4°C)	PROCESS s available (Range Min occuple N (0.0 - 1399.6°C) N (32.0 - 2551.3°F) R (0 - 1759°C) R (32 - 3198°F) S (0 - 1759°C) S (32 - 3198°F) T (-240.0 - 400.5°C)	INPUTS imum – Range Maximum) RTD PT100 (199.9 – 800.3°C) PT100 (-327.3 – 1472.5°F) N120 (-80.0 – 240.0°C) N120 (-112.0 – 464.0°F)	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 0 - 5V 0 - 5V 0 - 10V
Types           Therm           B (100 - 1824°C)           B (212 - 3315°F)           J (2201 - 1200.3°C)           J (328.2 - 2192.5°F)           K (240.1 - 1372.9°C)           K (400.2 - 2503.2°F)           L (-0.1 - 761.4°C)           L (31.4 - 1402.5°F)	PROCESS s available (Range Min occouple N (0.0 - 1399.6°C) N (32.0 - 2551.3°F) R (0 - 1759°C) R (32 - 3198°F) S (0 - 1759°C) S (32 - 3198°F) T (-240.0 - 400.5°C) T (-400.0 - 752.9°F)	INPUTS imum - Range Maximum) RTD PT100 (-199.9 - 800.3°C) PT100 (-327.3 - 1472.5°F) N120 (-80.0 - 240.0°C) N120 (-112.0 - 464.0°F)	DC Linear           0 - 20mA           4 - 20mA           0 - 50mV           10 - 50mV           0 - 5V           0 - 5V           0 - 10V           2 - 10V
Types           B (100 - 1824°C)           B (212 - 3315°F)           J (200.1 - 1200.3°C)           J (3282 - 2192.5°F)           K (400.2 - 2503.2°F)           K (400.2 - 2503.2°F)           L (-0.1 - 761.4°C)           L (21.8 - 1402.5°F)           E (-250 - 99°C)           E (-418 - 1830°F)	PROCESS s available (Range Min occuple N (0.0 - 1399.6°C) N (32.0 - 2551.3°F) R (0 - 1759°C) R (32 - 3198°F) S (0 - 1759°C) S (32 - 3198°F) T (-240.0 - 400.5°C) T (-400.0 - 752.9°F)	INPUTS imum – Range Maximum) RT0 PT100 (1919 – 800.3°C) PT100 (-327.3 – 1472.5°F) NI 120 (-80.0 – 240.0°C) NI 120 (-112.0 – 464.0°F)	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 1 - 5V 1 - 5V 0 - 10V 2 - 10V
Types           Therm           B (100 - 1824°C)           B (212 - 3315°F)           J (2200.1 - 1200.3°C)           J (328.2 - 1292.5°F)           K (240.1 - 1372.9°C)           K (400.2 - 2503.2°F)           L (-0.1 - 761.4°C)           L (31.8 - 1402.5°F)           E (-250 - 999°C)           E (-418 - 1830°F)	PROCESS s available (Range Min occouple N (0.0 – 1399.6°C) N (32.0 – 2551.3°F) R (0 – 1759°C) R (32 – 3198°F) S (0 – 1759°C) S (32 – 3198°F) T (-240.0 – 400.5°C) T (-400.0 – 752.9°F) T (-400.0 – 752.9°F)	INPUTS imum - Range Maximum) RTD PT100 (-199.9 - 800.3°C) PT100 (-327.3 - 1472.5°F) N120 (-80.0 - 240.0°C) N120 (-112.0 - 464.0°F) PLE INPUTS	DC Linear 0 - 20mA 4 - 20mA 10 - 50mV 10 - 50mV 1 - 5V 0 - 10V 2 - 10V
Types           Therm           B (100 – 1824*C)         B (212 – 3315*F)           J (2201 – 1200.3*C)         J (328.2 – 1200.3*C)           J (328.2 – 1200.3*C)         K (440.2 – 1200.3*C)           K (440.2 – 2503.2*F)         K (440.2 – 2503.2*F)           L (31.8 – 14402.5*F)         E (-250 – 999*C)           E (-418 – 1830*F)         E (-418 – 1830*F)	PROCESS           s available (Range Min occouple           N (0.0 – 1399.6 °C)           N (32.0 – 2551.3 °F)           R (0 – 1759°C)           R (32 – 3198°F)           S (0 – 1759°C)           S (32 – 3198°F)           T (-240.0 – 400.5 °C)           T (-400.0 – 752.9 °F)           THERMOCOUL           Better than ±0.1% of	INPUTS           imum – Range Maximum)           RTD           PT100 (-199.9 – 800.3°C)           PT100 (-327.3 – 1472.5°F)           N 120 (80.0 – 240.0°C)           N 120 (-112.0 – 464.0°F)           PLE INPUTS           range span ±1 LSD. Note: Ref	DC Linear 0 - 20mA 4 - 20mA 10 - 50mV 0 - 50V 1 - 5V 0 - 10V 2 - 10V 2 - 10V
Types           Therm           B (100 – 1824°C)         B (212 – 3315°F)           J (2021 – 1200.3°C)         J (328.2 – 2192.5°F)           K (240.1 – 1372.9°C)         K (440.2 – 2503.2°F)           L (0.1 – 761.4°C)         L (31.8 – 1402.5°F)           E (-250 – 999°C)         E (-418 – 1830°F)           Measurement         Accuracy	PROCESS           available (Range Min           occuple           N (0.0 - 1399.6°C)           N (32.0 - 2551.3°F)           R (0 - 1759°C)           R (32 - 3198°F)           S (0 - 1759°C)           S (32 - 3198°F)           T (-240.0 - 400.5°C)           T (-400.0 - 752.9°F)           THERMOCOUL           Better than ±0.1% of performance with Typ	INPUTS           Imum – Range Maximum)           RTD           PT100 (-199.9 - 800.3°C)           PT100 (-327.3 - 1472.5°F)           N1 120 (-80.0 - 240.0°C)           NI 120 (-112.0 - 464.0°F)           PLE INPUTS           range span ±1 LSD. Note: Rei           range thermocouple between	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 1 - 5V 1 - 5V 0 - 10V 2 - 10V educed 100 -
Types           Therm           B (100 – 1824°C)         B (212 – 3315°F)           J (2201 – 1200.3°C)         J (328.2 – 2102.5°F)           K (240.1 – 1372.9°C)         K (400.2 – 2503.2°F)           L (-0.1 – 761.4°C)         L (31.8 – 1402.5°F)           E (-250 – 999°C)         E (-418 – 1830°F)           Measurement Accuracy	PROCESS s available (Range Min occuple N (0.0 - 1399.6°C) N (32.0 - 2551.3°F) R (0 - 1759°C) R (32 - 3198°F) S (32 - 3198°F) T (-240.0 - 400.5°C) T (-240.0 - 400.5°C) T (-400.0 - 752.9°F) THERMOCOUI Better than ±0.1% of performance with Typ 600°C (212 - 1112°F	INPUTS           imum – Range Maximum)           RTD           PT100 (-199.9 – 800.3°C)           PT100 (-327.3 – 1472.5°F)           N1 20 (-80.0 – 240.0°C)           NI 120 (-112.0 – 464.0°F)           PLE INPUTS           range span ±1 LSD. Note: Ree           e "B" thermocouple between           ). Type "T" accuracy is ±0.5%	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 1 - 5V 0 - 10V 2 - 10V 2 - 10V educed 100 - below -
Types           Therm           B (100 – 1824°C)         B (212 – 3315°F)           J (2201 – 1200.3°C)         J           J (-2202 – 2192.5°F)         K (240.1 – 1372.9°C)           K (-400.2 – 250.32°F)         L (0.1 – 761.4°C)           L (31.8 – 1402.5°F)         E (250 – 999°C)           E (-250 – 999°C)         E (-418 – 1830°F)           Measurement           Accuracy           L inegrisation	PROCESS s available (Range Min ocouple N (0.0 - 1399.6°C) N (32.0 - 2551.3°F) R (0 - 1759°C) R (32 - 3198°F) S (0 - 1759°C) S (32 - 3198°F) T (-240.0 - 400.5°C) T (-240.0 - 400.5°C) T (-400.0 - 752.9°F) T (-400.0 - 752.9°F) T HERMOCOUI Better than ±0.1% of performance with Typ 600°C (212 - 1112°F 100°C	INPUTS           RTD           RTD           PT100 (199.9 – 800.3°C)           PT100 (199.9 – 800.3°C)           N1100 (-327.3 – 1472.5°F)           N1120 (-80.0 – 240.0°C)           N1120 (-112.0 – 464.0°F)           PLE INPUTS           range span ±1 LSD. Note: Reie           er B" thermocouple between           ). Type "T" accuracy is ±0.5%	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 1 - 5V 0 - 10V 2 - 10V 2 - 10V educed 100 - below -
Types           Therm           B (212 – 3315°F)         B (212 – 3315°F)           J (2200.1 – 1200.3°C)         J (328.2 – 1200.3°C)           J (2200.1 – 1200.3°C)         J (328.2 – 1200.3°C)           K (240.1 – 1372.3°C)         K (400.2 – 2503.2°F)           L (-0.1 – 761.4°C)         L (31.8 – 1402.5°F)           E (-250 – 999°C)         E (-418 – 1830°F)           Measurement           Accuracy           Linearisation           Accuracy	PROCESS s available (Range Min occouple N (0.0 – 1399.6°C) N (32.0 – 2551.3°F) R (0 – 1759°C) R (32 – 3198°F) S (0 – 1759°C) S (32 – 3198°F) T (-240.0 – 400.5°C) T (-400.0 – 752.9°F) T (-400.0 – 752.9°F) THERMOCOUI Better than ±0.1% of performance with Typ 600°C (212 – 1112°F 100°C Better than ±0.2°C ar	INPUTS           imum – Range Maximum)           RTD           PT100 (-199.9 – 800.3°C)           PT100 (-327.3 – 1472.5°F)           N120 (80.0 – 240.0°C)           N120 (-112.0 – 464.0°F)           PLE INPUTS           range span ±1 LSD. Note: Re           re "B" thermocouple between           ). Type "T" accuracy is ±0.5%           w) point, for 0.1°C resolution r	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 0 - 5V 1 - 5V 0 - 10V 2 - 10V 2 - 10V 2 - 10V - 50 0 - 00V 2 - 10V - 50 - 50
Types           Therm           B (100 – 1824°C)         B (212 – 3315°F)           J (2201 – 1200.3°C)         J (328.2 – 1200.3°C)           J (2201 – 1200.3°C)         K (240.1 – 1372.9°C)           K (240.1 – 1372.9°C)         K (240.2 – 2503.2°F)           L (31.8 – 1402.5°F)         E (250 – 999°C)           E (418 – 1830°F)         E (2418 – 1830°F)           Measurement           Accuracy         Linearisation           Accuracy         Linearisation	PROCESS           s available (Range Min occouple           N (0.0 – 1399.6°C)           N (32.0 – 2551.3°F)           R (0 – 1759°C)           S (32 – 3198°F)           S (0 – 1759°C)           S (32 – 3198°F)           T (-240.0 – 400.5°C)           T (-400.0 – 752.9°F)           THERMOCOUI           Better than ±0.1% of performance with Typ 600°C (212 – 1112°F)           100°C           Better than ±0.2°C ar (0.05°C typical)           Better than ±0.2°C ar           (0.05°C typical)           Better than ±0.5°C ar	INPUTS           imum – Range Maximum)           RTD           PT100 (-199.9 – 800.3°C)           PT100 (-327.3 – 1472.5°F)           N1 20 (-80.0 – 240.0°C)           NI 120 (-112.0 – 464.0°F)           PELE INPUTS           range span ±1 LSD. Note: Rege "B" thermocouple between           ). Type "T" accuracy is ±0.5%           vp point, for 0.1°C resolution r           vp point, for 1°C resolution range	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 1 - 50V 0 - 5V 0 - 10V 2 - 10V 2 - 10V 2 - 10V 2 - 10V aduced 100 - below - anges nges.
Types           Therm           B (100 – 1824*C)         B (212 – 3315*F)           J (2201 – 1200.3*C)         J (328.2 – 2192.5*F)           K (400.2 – 2503.2*F)         K (400.2 – 2503.2*F)           L (31.8 – 1402.5*F)         E (-250 – 999*C)           E (-418 – 1830*F)         E (-250 – 999*C)           E data         Kasurement           Accuracy         Linearisation           Accuracy         CJC	PROCESS           s available (Range Min occouple           N (0.0 – 1399.6°C)           N (32.0 – 2551.3°F)           R (0 – 1759°C)           R (32 – 3198°F)           S (0 – 1759°C)           S (32 – 3198°F)           T (-240.0 – 400.5°C)           T (-400.0 – 752.9°F)           THERMOCOUI           Better than ±0.1% of performance with Typ 600°C (212 – 1112°F           100°C           Better than ±0.2°C ar (0.05°C typical)           Better than ±0.5°C ar Better than ±1.5°C ar	INPUTS           imum – Range Maximum)           RTD           PT100 (-199.9 – 800.3°C)           PT100 (-327.3 – 1472.5°F)           N1 20 (-80.0 – 240.0°C)           NI 120 (-112.0 – 464.0°F)           PLE INPUTS           range span ±1 LSD. Note: Repe "B" thermocouple between           ). Type "T" accuracy is ±0.5%           ny point, for 0.1°C resolution range operating temperature range.	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 1 - 5V 0 - 10V 2 - 10V - 50 - 5
Types           Therm           B (100 – 1824°C)         B (212 – 3315°F)           J (2021 – 1200.3°C)         J (328.2 – 2192.5°F)           K (240.1 – 1372.9°C)         K (440.2 – 2503.2°F)           L (31.8 – 1402.5°F)         E (250 – 999°C)           E (418 – 1830°F)         E (250 – 999°C)           E (318 – 1830°F)         E (318 – 1830°F)           C (200 – 2500 – 2	PROCESS           s available (Range Min           ocouple           N (0.0 - 1399.6°C)           N (32.0 - 2551.3°F)           R (0 - 1759°C)           S (0 - 1759°C)           S (32 - 3198°F)           T (-240.0 - 400.5°C)           T (-240.0 - 752.9°F)           THERMOCOUL           Better than ±0.1% of performance with Typ           p60°C (212 - 1112°F           10°C           Better than ±0.2°C ar           (0.65°C typical)           Better than ±0.5°C ar           Better than ±0.5°C ar           stetter than ±10.4°C over           <10Ω: as measured ar	INPUTS           Imum – Range Maximum)           RTD           PT100 (-199.9 - 800.3°C)           PT100 (-327.3 - 1472.5°F)           N1 120 (-80.0 - 240.0°C)           NI 120 (-112.0 - 464.0°F)   PLE INPUTS range span ±1 LSD. Note: Referender and the set of thermocouple between the "B" thermocouple between between the "B" thermocouple between the "B" thermocouple between the set of the thermocouple between the the thermocouple between the thermocouple between the thermocouple bet	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 1 - 5V 0 - 10V 2 - 10V 2 - 10V educed 100 - below - anges nges.
Types           Therm           B (212 – 3315°F)         B (212 – 3315°F)           J (2200.1 – 1200.3°C)         J (320.1 – 1200.3°C)           J (320.1 – 1372.9°C)         K (440.2 – 2503.2°F)           K (240.1 – 1372.9°C)         E (250 – 999°C)           E (418 – 1830°F)         E (4250 – 999°C)           E (441 – 1830°F)         E (441 – 1830°F)           Measurement           Accuracy           Linearisation           Accuracy           CJC           Sensor           Resistance           E/former	PROCESS           s available (Range Min occouple           N (0.0 – 1399.6°C)           N (32.0 – 2551.3°F)           R (0 – 1759°C)           R (32 – 3198°F)           S (0 – 1759°C)           S (2 – 3198°F)           T (-240.0 – 400.5°C)           T (-240.0 – 400.5°C)           T (-240.0 – 400.5°C)           T (-240.0 – 400.5°C)           Better than ±0.1% of performance with Typ 600°C (212 – 1112°F 100°C           Better than ±0.2°C ar (0.05°C typical)           Better than ±0.2°C ar Better than ±0.5°C ar Better than ±1C over           C1002: as measured a 10002: <0.1% of range	INPUTS           Imum – Range Maximum)           RTD           PT100 (-199.9 – 800.3°C)           PT100 (-327.3 – 1472.5°F)           N1 120 (-80.0 – 240.0°C)           NI 120 (-112.0 – 464.0°F)           PLE INPUTS           range span ±1 LSD. Note: Reference           e "B" thermocouple between           ). Type "T" accuracy is ±0.5%           hy point, for 0.1°C resolution r           operating temperature range;           accuracy           e span error	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 0 - 5V 1 - 5V 0 - 10V 2 - 10V 2 - 10V duced 100 - , below - anges nges.
Types           Therm           B (100 – 1824°C)         B (212 – 3315°F)           J (2200.1 – 1200.3°C)         J (328.2 – 1200.3°C)           K (240.1 – 1200.3°C)         K (440.2 – 2503.2°F)           L (-0.1 – 761.4°C)         L (31.8 – 1402.5°F)           E (-250 – 999°C)         E (-418 – 1830°F)           Measurement         Accuracy           Linearisation         Accuracy           CJC         Sensor           Resistance         Influence           Thormocounts         Total	PROCESS           s available (Range Min occouple           N (0.0 – 1399.6°C)           N (32.0 – 2551.3°F)           R (0 – 1759°C)           R (32 – 3198°F)           S (0 – 1759°C)           S (32 – 3198°F)           T (-240.0 – 400.5°C)           T (-400.0 – 752.9°F)           THERMOCOUI           Better than ±0.1% of performance with Typ 600°C (212 – 1112°F           D00°C           Better than ±0.2°C ar (0.05°C typical)           Better than ±0.2°C ar (0.05°C typical)           Better than ±0.5°C ar Better than ±1C over <10Ω: «0.1% of rang 100Ω: <0.1% of rang           Complication with FQ 400°	INPUTS           Imum – Range Maximum)           RTD           PT100 (-199.9 – 800.3°C)           PT100 (-327.3 – 1472.5°F)           N120 (80.0 – 240.0°C)           N120 (80.0 – 240.0°C)           N120 (-112.0 – 464.0°F)           PLE INPUTS           range span ±1 LSD. Note: Re           e° T° thermocouple between           ). Type "T" accuracy is ±0.5%           ay point, for 0.1°C resolution r           accuracy           e span error           ge span error           ge span error           ge span error           ge span error	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 1 - 5V 0 - 10V 2 - 10V 2 - 10V 2 - 10V 2 - 10V adduced 100 - below - anges nges.
Types           Therm           B (100 – 1824°C)         B (212 – 3315°F)           J (2201 – 1200.3°C)         J (328.2 – 1200.3°C)           K (440.2 – 1200.3°C)         K (440.2 – 2503.2°F)           K (-240.1 – 1372.9°C)         L (-0.1 – 761.4°C)           L (31.8 – 14402.5°F)         E (-250 – 999°C)           E (-418 – 1830°F)         E (-250 – 999°C)           B (-418 – 1830°F)         E (-250 – 999°C)           E (-418 – 1830°F)         E (-250 – 999°C)           Sensor         Resistance           Influence         Thermocouple           Calibration         Calibration	PROCESS           available (Range Min occuple           N (0.0 – 1399.6°C)           N (32.0 – 2551.3°F)           R (0 – 1759°C)           R (32 – 3198°F)           S (0 – 1759°C)           S (32 – 3198°F)           T (-240.0 – 400.5°C)           T (-400.0 – 752.9°F)           THERMOCOUL           Better than ±0.1% of performance with Typ 600°C (212 – 1112°F           100°C           Better than ±0.2°C ar (0.05°C typical)           Better than ±0.2°C ar (0.05°C typical)           Better than ±0.2°C ar (0.00°C :           c10Ω: as measured a 100Ω: <0.1% of range 100ΩC: <0.5% of range Complies with BS493	INPUTS           imum – Range Maximum)           RTD           PT100 (-199.9 – 800.3°C)           PT100 (-327.3 – 1472.5°F)           N1 20 (-80.0 – 240.0°C)           NI 120 (-112.0 – 464.0°F)           PELE INPUTS           range span ±1 LSD. Note: Refe "B" thermocouple between           ). Type "T" accuracy is ±0.5%           ny point, for 0.1°C resolution range accuracy           e span error           ge span error           ge span error           77, NBS125 & IEC584	DC Linear 0 - 20mA 4 - 20mA 0 - 50mV 10 - 50mV 0 - 5V 0 - 10V 2 - 10V 2 - 10V 2 - 10V 2 - 10V aduced 100 - b below - anges nges.

RTD INPUTS			
Measurement	±0.1% of range span ±1 LSD for single Loop Modules		
Accuracy	±0.2% of range span ±1 LSD for multiple Loop Modules		
Linearisation	Better than ±0.2°C any point (0.05°C typical)		
Tomporaturo	0.01% of range span/°C change in ambient temperature		
Stability	0.01% of range span/ C change in ambient temperature.		
Lead	Automatic to $50\Omega$ maximum lead resistance, giving less than		
Compensation	0.5% of span additional error.		
RTD Sensor	150μA ±10μA		
Current PT100	Complian with BS1004 & DIN42760 (0.002850/0/%C)		
Calibration	Complies with BS 1904 & Div43760 (0.0038352/52/ C)		
	DC LINEAR INPLITS		
Measurement	Better than +0.1% of programmed range span +1.1 SD		
Accuracy	better than 10.1% of programmed range span 11 Lob.		
Temperature	0.01% of range span/°C change in ambient temperature		
Stability			
Input Resistance	mV Input: >1MΩ		
	mA Input:4.70		
Maximum	-32000 to 32000. Equivalent to a 16-bit ADC		
Resolution			
HEATER CURRENT INPUT (Z1301, Z3611, Z3621 and Z3651 only)			
Input Sampling	Delta-sigma at 1kHz		
Method			
Input Resolution	8 bits over 250mseconds rolling window		
Isolation	Via external current transformer		
Internal Burden			
Input Span	0 – 60mA rms. (assuming sinusoidal input current waveform)		
Range Maximum	Adjustable 0.1A to 1000.0A		
Range Minimum	Fixed at 0A		
	RELAY OUTPUTS		
Contact Type	Single pole single throw (SPST) Normally open contacts (N/O)		
Rating	2A resistive @ 120/240VAC		
Lifetime	>500,000 operations at rated voltage/current		
Lifetime	>500,000 operations at rated voltage/current SSR DRIVE OUTPUTS		
Lifetime Drive Capability	>500,000 operations at rated voltage/current SSR DRIVE OUTPUTS 12V DC nominal (10V DC minimum) at up to 20mA load		
Lifetime Drive Capability Isolation	>500,000 operations at rated voltage/current SSR DRIVE OUTPUTS 12V DC nominal (10V DC minimum) at up to 20mA load Isolated from process input and relay outputs. Not isolated from cereb others of libear outputs. Not isolated from others		
Lifetime Drive Capability Isolation	>500,000 operations at rated voltage/current SSR DRIVE OUTPUTS 12V DC nominal (10V DC minimum) at up to 20mA load Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.		
Lifetime Drive Capability Isolation	>500,000 operations at rated voltage/current SSR DRIVE OUTPUTS 12V DC nominal (10V DC minimum) at up to 20mA load Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.		
Lifetime Drive Capability Isolation	>500,000 operations at rated voltage/current SSR DRIVE OUTPUTS 12V DC nominal (10V DC minimum) at up to 20mA load Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system. LINEAR OUTPUT Eight bits in 250mc (10 bits in 1 second typical)		
Lifetime Drive Capability Isolation Resolution Accuracy	>500,000 operations at rated voltage/current SSR DRIVE OUTPUTS 12V DC nominal (10V DC minimum) at up to 20mA load Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system. LINEAR OUTPUT Eight bits in 250ms (10 bits in 1 second typical) ±0.25% (mA into 2500 load. V into 2kQ load) Degrading		
Lifetime Drive Capability Isolation Resolution Accuracy	>500,000 operations at rated voltage/current  SSR DRIVE OUTPUTS  12V DC nominal (10V DC minimum) at up to 20mA load Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.  LINEAR OUTPUT  Eight bits in 250ms (10 bits in 1 second typical) ±0.25% (mA into 2500 load, V into 2k0 load) Degrading linearly to ±0.5% for increasing burden to maximum drive		
Lifetime Drive Capability Isolation Resolution Accuracy	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Q maximum load		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-5V: 500Ω minum load		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-5V: 500Ω minum load           0-5V: 500Ω minum load		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation	>500,000 operations at rated voltage/current     SSR DRIVE OUTPUTS     12V DC nominal (10V DC minimum) at up to 20mA load     Isolated from process input and relay outputs. Not isolated     from each other or linear outputs. Not isolated from other     similar outputs in the same system.     LINEAR OUTPUT     Eight bits in 250ms (10 bits in 1 second typical)     ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading     linearly to ±0.5% for increasing burden to maximum drive     capability.     10 samples per second     0-20mA: 500Ω maximum load     4-20mA: 500Ω maximum load     0-50V: 500Ω minimum load     Isolated from process input and relay outputs. Not isolated		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2k0 load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 5000 maximum load           4-20mA: 5000 minimum load           0-10V: 5000 minimum load           10 solated from process input and relay outputs. Not isolated from SSR Drive outputs or other similar outputs in the same outputs		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation	>500,000 operations at rated voltage/current         SSR DRIVE OUTPUTS         12V DC nominal (10V DC minimum) at up to 20mA load         Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.         LINEAR OUTPUT         Eight bits in 250ms (10 bits in 1 second typical)         ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.         10 samples per second         0-20mA: 500Ω maximum load         4-20mA: 500Ω minimum load         0-10V: 500Ω minimum load         0-10V: 500Ω minimum load         0-200mA: S00Ω maximum load         0-200mA: S00Ω maximum load         0-200mA: S00Ω minimum load         0-200mA: S00Q minimum load         0-200mA: S00Q minimum load         0-200mA: S00Q minimum load         0-200mA: S00Q minimum load		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation	>500,000 operations at rated voltage/current         SSR DRIVE OUTPUTS         12V DC nominal (10V DC minimum) at up to 20mA load         Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.         LINEAR OUTPUT         Eight bits in 250ms (10 bits in 1 second typical)         ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.         10 samples per second         0-20mA: 500Ω maximum load         4-20mA: 500Ω minimum load         0-10V: 500Ω minimum load         10 solute from process input and relay outputs. Not isolated from SSR Drive outputs or other similar outputs in the same system         OPERATING CONDITIONS		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Ambient Temperature	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 250Ω load, V into 2KΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           4-20mA: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           10 solated from process input and relay outputs. Not isolated from SSR Drive outputs or other similar outputs in the same system           OPERATING CONDITIONS           0°C to 50°C (operating); -20°C to 80°C (storage)		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Ambient Temperature Relative Humidity	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2k0 load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-5V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: S00Ω minimum load           0-10V: S00Ω minimum load           0-20mA: 000 minimum load           0-20C (operating); -20°C to 80°C (storage)           30% - 90% non-condensing (operating and storage)		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Accuracy Ambient Temperature Relative Humidity Supply Voltage	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω context or the similar outputs in the same system           OPERATING CONDITIONS           0°C to 50°C (operating); -20°C to 80°C (storage)           30% - 90% non-condensing (operating and storage)           Powered by Bus Module within its operating conditions		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Ambient Temperature Relative Humidity Supply Voltage Altitude	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-5V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω compute or other similar outputs in the same system           OPERATING CONDITIONS           0°C to 50°C (operating); -20°C to 80°C (storage)           30% - 90% non-condensing (operating and storage)           Powered by Bus Module within its operating conditions		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Ambient Temperature Relative Humidity Supply Voltage Altitude EMC Standard	>500,000 operations at rated voltage/current         SSR DRIVE OUTPUTS         12V DC nominal (10V DC minimum) at up to 20mA load         Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.         LINEAR OUTPUT         Eight bits in 250ms (10 bits in 1 second typical)         ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.         10 samples per second         0-20mA: 500Ω maximum load         0-50% : 500Ω minimum load         0-10V: 500Ω minimum load         0-10V: 500Ω minimum load         0-10V: 500Ω more singly and relay outputs. Not isolated from SSR Drive outputs or other similar outputs in the same system         OPERATING CONDITIONS         0°C to 50°C (operating); -20°C to 80°C (storage)         30% - 90% non-condensing (operating and storage)         Powered by Bus Module within its operating conditions         <2000m		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Isolation Ambient Temperature Relative Humidity Supply Voltage Altitude EMC Standard Safety	>500,000 operations at rated voltage/current     SSR DRIVE OUTPUTS     12V DC nominal (10V DC minimum) at up to 20mA load     Isolated from process input and relay outputs. Not isolated     from each other or linear outputs. Not isolated from other     similar outputs in the same system.     LINEAR OUTPUT     Eight bits in 250ms (10 bits in 1 second typical)     ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading     linearly to ±0.5% for increasing burden to maximum drive     capability.     10 samples per second     0-20mA: 500Ω maximum load     4-20mA: 500Ω maximum load     0-50V: 500Ω minimum load     Solated from process input and relay outputs. Not isolated     from SSR Drive outputs or other similar outputs in the same     system     OPERATING CONDITIONS     0°C to 50°C (operating); -20°C to 80°C (storage)     30% - 90% non-condensing (operating and storage)     Powered by Bus Module within its operating conditions     <2000m     EN61326-1.     Complies with EN61010-1 and UL 3121-1.		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Ambient Temperature Relative Humidity Supply Voltage Altitude EMC Standard Safety	>500,000 operations at rated voltage/current         SSR DRIVE OUTPUTS         12V DC nominal (10V DC minimum) at up to 20mA load         Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.         LINEAR OUTPUT         Eight bits in 250ms (10 bits in 1 second typical)         ±0.25% (mA into 250Ω load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.         10 samples per second         0-20mA: 500Ω maximum load         0-20mA: 500Ω minimum load         0-10V: 500Ω minimum load         0-10V: 500Ω minimum load         0-10V: 500Ω minimum load         0*C to 50°C (operating); -20°C to 80°C (storage)         30% - 90% non-condensing (operating and storage)         Powered by Bus Module within its operating conditions         <2000m         EN61326-1.         Complies with EN61010-1 and UL 3121-1.         Pollution Degree 2, Installation Category II. Indoor use only		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Isolation Ambient Temperature Relative Humidity Supply Voltage Altitude EMC Standard Safety	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2k0 load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-5V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           0-20°C to 50°C (operating); -20°C to 80°C (storage)           30% - 90% non-condensing (operating and storage)           Powered by Bus Module within its operating conditions           <2000m           EN61326-1.           Complies with EN61010-1 and UL 3121-1.           Pollution Degree 2, Installation Category II. Indoor use only		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Accuracy Update Maint Resolution Ambient Temperature Relative Humidity Supply Voltage Altitude EMC Standard Safety Dimensions	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-5V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: S00Ω minimum load           0-20m Coperating Coperating and storage)           0°C to 50°C (operating); -20°C to 80°C (storage)           30% - 90% non-condensing (operating and storage)           Powered by Bus Module within its operating conditions           <2000m           EN61326-1.           Complies with EN61010-1 and UL 3121-1.           Pollution Degree 2, Installation Category II. Indoor use only           PHYSICAL           Height: - 100mm; Width: - 22mm; Depth: - 120mm		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Ambient Temperature Relative Humidity Supply Voltage Altitude EMC Standard Safety Dimensions Mounting	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2kΩ load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-20mA: 500Ω maximum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω complex or other similar outputs in the same system           OPERATING CONDITIONS           0°C to 50°C (operating); -20°C to 80°C (storage)           30% - 90% non-condensing (operating and storage)           Powered by Bus Module within its operating conditions           <2000m           EN61326-1.           Complies with EN61010-1 and UL 3121-1.           Pollution Degree 2, Installation Category II. Indoor use only           PHYSICAL           Height: - 100mm; Width: - 22mm; Depth: - 120mm           35mm x 7.5mm Top Hat DIN rail mounting via Interconnect		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Ambient Temperature Relative Humidity Supply Voltage Altitude EMC Standard Safety Dimensions Mounting Capaceter Time	>500,000 operations at rated voltage/current           SSR DRIVE OUTPUTS           12V DC nominal (10V DC minimum) at up to 20mA load           Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.           LINEAR OUTPUT           Eight bits in 250ms (10 bits in 1 second typical)           ±0.25% (mA into 2500 load, V into 2k0 load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.           10 samples per second           0-20mA: 500Ω maximum load           0-5V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω maximum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           0-10V: 500Ω minimum load           0°C to 50°C (operating); -20°C to 80°C (storage)           30% - 90% non-condensing (operating and storage)           Powered by Bus Module within its operating conditions           <2000m           EN61326-1.           Complies with EN61010-1 and UL 3121-1.           Pollution Degree 2, Installation Category II. Indoor use only           PHYSICAL           Height: - 100mm;		
Lifetime Drive Capability Isolation Resolution Accuracy Update Rate Drive Capability Isolation Isolation Ambient Temperature Relative Humidity Supply Voltage Attitude EMC Standard Safety Dimensions Mounting Connector Types Weinbt	>500,000 operations at rated voltage/current         SSR DRIVE OUTPUTS         12V DC nominal (10V DC minimum) at up to 20mA load         Isolated from process input and relay outputs. Not isolated from each other or linear outputs. Not isolated from other similar outputs in the same system.         LINEAR OUTPUT         Eight bits in 250ms (10 bits in 1 second typical)         ±0.25% (mA into 2500 load, V into 2k0 load) Degrading linearly to ±0.5% for increasing burden to maximum drive capability.         10 samples per second         0-20mA: 500Ω maximum load         4.20mA: 500Ω maximum load         0-510V: 500Ω minimum load         0-510V: 500Ω minimum load         0-50V: 500Ω minimum load         0-10V: 500Ω minimum load         0-10V: 500Ω minimum load         0-10V: 500Ω minimum load         0-20mA: 500Ω maximum load         0-10V: 500Ω minimum load         10 sate from process input and relay outputs. Not isolated from SSR Drive outputs or other similar outputs in the same system         0°C to 50°C (operating); -20°C to 80°C (storage)         30% - 90% non-condensing (operating and storage)         Powered by Bus Module within its operating conditions         <2000m </th		