Genesys Modular Stack is a technology allowing for the easy interconnection of expansion modules. Genesys Modular Stack compliant modules feature a characteristic pair of board-to-board feedthrough connectors, so that they are infinitely stackable with each module adding new functionality. The Isolated 4-20mA Loop Base Board is fully Genesys Modular Stack compatible and features receptacles to support any number of modules.

ISOLATED 4-20mA LOOP BASE BOARD

The Genesys Isolated 4-20mA Loop Base Board allows M2M/IoT-enabling of industrial current loop and voltage input instrumentation, and integration with other serial and parallel analog and digital interfaces. The Isolated Loop Base Board is fully compatible with Genesys Modular Stack allowing you to combine this system with other modules such as the Genesys 3G Module (GBI-MC-201) to create the ultimate industrial monitoring and control solution.

FLEXIBILITY

Each unit is provided with two 4-20mA current loop channels. The board can be configured to be compatible with 0-20mA, 0-10V, 1-10V, 0-50V and 1-50V inputs via fitting options. Isolated loop power is provided on-board, along with calibration test sources and gain and offset pots for simple technician access. Further, Isolated Loop Base Board supports RS-422/485, isoSPI and USB communications connectivity, plus a generous set of isolated and non-isolated GPIO including buffered ADC and DAC interfaces.

EXTENSIVELY PROTECTED

This module is designed to tolerate industrial-strength conditions, with a heavy design emphasis on robust protection and, for core interfaces, galvanic isolation. Comprehensive protection circuitry protects IO from ESD, over-voltage and reverse polarity events.

CALL US ON +61 2 9496 8900
Unit 5, 33 Ryde Road
Pymble NSW 2073 Australia
enquiries@genesysdesign.com.au

Product Code: GBI-BS-201

CHARACTERISTICS OVERVIEW
DIMENSIONS
112mm x 86mm

ON-BOARD
RTC, Dual serial EEPROMs, with unique ID

ISOLATED CONNECTIVITY
Two Instrument Channels with On-board Calibration and Configurability for 0-20mA, 4-20mA, 0-10V, 1-10V, 0-50V and 1-50V
Two GPIO Sets (2 GPI, 1 GPO each)

NON-ISOLATED CONNECTIVITY
Genesys Modular Stack dual 40-pin connector
RS-422/485, USB and isoSPI
Buffered Analog IO, Protected Digital IO

Genesys Modular Stack is a technology allowing for the easy interconnection of expansion modules. Genesys Modular Stack compliant modules feature a characteristic pair of board-to-board feedthrough connectors, so that they are infinitely stackable with each module adding new functionality. The Isolated 4-20mA Loop Base Board is fully Genesys Modular Stack compatible and features receptacles to support any number of modules.
CHARACTERISTICS

**ISOLATED INTERFACES**
- 1kVrms isolation voltage
- 5mm creepage/clearance distances
- Transzorb, PTC and gas-arrester protection
- PWM or continuous signalling
- Two mutually isolated instrumentation inputs:
  - 0-20mA or 4-20mA current loop
  - 0-10V, 1-10V, 0-50V and 1-50V sensing
  - On-board loop power, calibration source and gain/offset adjustment
- Two mutually isolated GPIO sets, each with:
  - 2 inputs, 1 output
  - Configurable as voltage/volt-free contact
- Optional isoSPI differential pair

**NON-ISOLATED INTERFACES**
- Transzorb and PTC protection
- Genesys Modular Stack dual 40-pin connector
- RS-422/485, with daisychain and bus powering
- USB micro A/B Device Port
- Buffered Analog IO, Protected Digital IO
  - 2 ADC inputs, 2 DAC outputs; PWM or continuous signalling
  - 15 GPIO
- Genesys Modular Stack Dual 40-pin Connector:
  - 3V3 Power
  - 2 UARTs
  - Serial Peripheral Interface [SPI]
  - Inter-Integrated Circuit [I2C]
  - 6 Analogue/Digital Converters
  - Keyboard Interface
  - Timer/Counter IO
  - General Purpose Input/Outputs
  - JTAG Programmer

**USER INTERFACE**
- 1 Reset and 1 System pushbutton w/ RGB LED
- 2 configurable orange LEDs
- Calibration test source switch
- Input channel gain and offset pots

**PERIPHERAL SPECIFICATIONS**
- Battery-backed real-time clock
- 1Mb Serial EEPROM
- 2kb Serial EEPROM with factory-programmed EUI-48™ address

**POWERING OPTIONS**
- 12V external power connector
- Battery connector
- RS-422/485 bus powering

**PHYSICAL & ENVIRONMENTAL**
- Dimensions: 51mm x 39mm
- Temperature (operating): -15°C to +55°C
- Temperature (survival): -55°C to +85°C
- Humidity (operating): 95% RH at 50°C

**MOUNTING DIMENSION DRAWING**