GS192
Edge Processing Interface

GEDGE SYSTEMS - Since 1978 Australia's Leading Manufacturer of High Accuracy Weighing Electronics now bringing you Superior Quality Gedge Load Cells.

Data visibility for better machine performance

The GS192 collates signals from industrial equipment for processing and publishing to the Cloud. Designed for monitoring small machines and automation systems it enables data visibility for determining machine health or process efficiency. Industrial grade digital inputs, relay contacts and analog process (4–20mA) input channels easily link process sensor inputs and standalone legacy automation such as PLCs, variable frequency drives and other discrete control systems to Industrial IoT cloud services.

Collect field operating data from your machine

GS192 built-in cloud interface sends data from your machine directly to the Cloud – useful for facilities maintenance monitoring, replenishing consumables and remote diagnostic monitoring.

Direct wireless interface to field process inputs

GS192 converts, conditions and processes analog signals directly to wireless WiFi (801.11) or (eMTC) LTE Cat-M1. No additional wireless modem required.

Easily integrates with your existing automation equipment

The GS192 natively supports MQTT Industrial IoT communications protocol. ModBus RTU master/slave communication port directly interfaces to metering and control automation. Application use cases include AMR (automatic meter reading), monitoring of remote asset productivity, energy consumption, and consumable supply tank levels. Onboard logic engine allows customization tailored to specific measurement and monitoring requirements.

Extra cloud interface security and Store and Forward data integrity

Connection and data security are paramount so the GS192 provides peace of mind with Transport Layer Security (TLS 1.2) protocol. In the event of a network communications failure the GS192 IoT Store and Forward function buffers data locally, forwarding to the cloud server once network communications are reinstated, securely monitoring and recording with total data integrity.

Key features:

- ›› DCS Direct Cloud Services (DCS) connection
- ›› MQTT with Transport Layer Security (TLS 1.2)
- ›› Data record store and forward record buffer
- ›› RTC record data time stamp at origin
- ›› Application logic and math functions
- ›› PC configuration tools, USB interface
- ›› Wireless WiFi (801.11) or (eMTC) LTE Cat-M1

- ›› 2 Process (4–20mA) inputs
- ›› 4 Digital inputs
- ›› 3 Relay outputs
- ›› 1 logic output (Open collector)
- ›› RS485 ModBus RTU master/slave interface
- ›› Local display (RS232C) interface port
- ›› AC mains and 24V low power operation

CLOUD CONNECTION OPTIONS

WiFi (801.11)

WiFi connection enables LOS transmission of up to 1500ft (450m) using the supplied 3dBi wireless antenna.

(eMTC) LTE CAT-M1

4G cellular interface developed specifically for Internet of Things (IoT) and machine-to-machine (M2M) communications.

Connection to IoT Cloud services

The GS192 is preconfigured to connect to Direct Cloud Services (DCS). Custom connection is available to connect to your own or third party IoT server. Cloud communication connection is secured using TLS and uses MQTT IoT service transfer protocol. JSON packets contain industry standard SenML (Sensor mark-up language) data.

ORDER CODES FOR GS192

Model/Option Description GS192 IoT	Model	Power supply	Wireless Comms WiFi/ LTE	RS232/485 Comms option
GS192 IoT processor module base configuration: MQTT cloud service interface – TLS security layer, store and forward record buffer, RTC data time stamp, 2x analog (4-20mA) process input (non-isolated), 4x digital input, 1x logic output (open collector, 80mA) 2x form A, 1x form C relay contacts (16A)	GS192			
85-265 V AC/DC power supplyH		V		
10-32 V DC power supply		LV		
No Wireless communication			–	
Cellular modem (eMTC) LTE Cat-M1			CM1	
WiFi (801.11)			WIF	
No RS232/485 communications				–
RS232/485 communications (isolated) - Modbus RTU master/ slave, ASCII and local display (RS232C) interface port				RS
Example configuration GS192 processor module base configuration, 85-265V AC/DC power supply, c ellular modem (eMTC) L TE C at-M1, R232/485 comms	GS192H	V	CM1	RS

GENERAL SPECIFICATIONS

Power

Power supply   85–265V AC (HV) 10–32V DC (LV)

Power consumption   10W max, 6W typical

Excitation output

24V DC @ 200mA maximum. T otal on all +24V output pins

Data Logging

31,774 samples with up to 30 parameters plus time stamp per sample. 32 MB capacity

Available with Real-Time Clock (RTC) option

RTC time base UTC

Local time in device with automatic daylight savings adjustment

Analog input

2x (4–20mA) process input

Input resolution   12 bits

Accuracy <±1.0% FSO (unless otherwise stated in input specifications)

Input isolation: Not isolated to power supply or digital inputs

General specifications

Linearity & repeatability   <±0.1% FSO

RF immunity <±1% effect FSO typical

Noise immunity (CMRR)   160dB tested at 300V RMS 50Hz

Permanent memory (E ^{2}ROM) 100,000 writes per input parameter

Relay output

1 x Change over Form C Relay   (15A 250V AC or 15A 30V DC)

2x Form A Relays   (3A 250V AC or 3A 30V DC)

Logic output

1 x Logic output   Open collector, (80mA maximum capacity)

NIM-SDS-191001 v1 © Define Instruments

Digital input

4 x Digital inputs

Functions Status, up counter, up/down counter with direction, debounced counter, frequency, gated frequency

Counter register output   32 bit

Frequency range   0–10,000Hz (Reduced to 0–1,000Hz in Sleep Mode)

Input types   NPN, PNP, Clean Contact, Voltage 2–30V DC

Threshold 1.65V typical

Debounce counter range   0–100Hz

Isolation: Not isolated to power supply or analog inputs

Comms

Protocols Modbus RTU, RS485 or Define ASCII, EIA485 compliant

Default comm port   RS485. Selectable baud rate 2400–230400 baud Format 8 bit, no parity, 1 stop bit

RS232 display port meets TIA/EIA-232-F and ITU v28 standards

Functional isolation   : 1,500VDC (1 min) Electrical isolation 42VAC/ DC (continuous)

Programming

USB programmable   Via 'PC Setup' port using Bridge Key USB programmer (sold separately)

Wireless comms interface

WiFi (801.11)

Cellular modem (eMTC) LTE Cat-M1 Regions NA, E1 and AU

TLS security protocol

Transport Layer Security (TLS) V1.2 with server certificate and X.509 client certificate authentication

Over Air Updates

Over The Air updates are available for main plugins, custom macros, certificates, cloud adapter firmware updates (WiFi and cellular)

MQTT interface

Based on MQTT 3.1.1 with QoS 0 & 1

Construction

Casing DIN 35 rail mounting; Material: ABS inflammability V0 (UL94)

Phoenix type removable screw termi - nal connectors

Dimensions (H x W x D) 3.98 x 0.91 x 4.72" (101 x 23 x 120mm)* *Excludes antenna and connectors

Required mounting height with antenna 4.29" (109mm), WiFi model only

Environmental conditions

Operating temperature   –40 to 176˚F (–40 to 80˚C)

Storage temperature   –40 to 176˚F (–40 to 80˚C)

Operating humidity   5–85% RH max, non-condensing

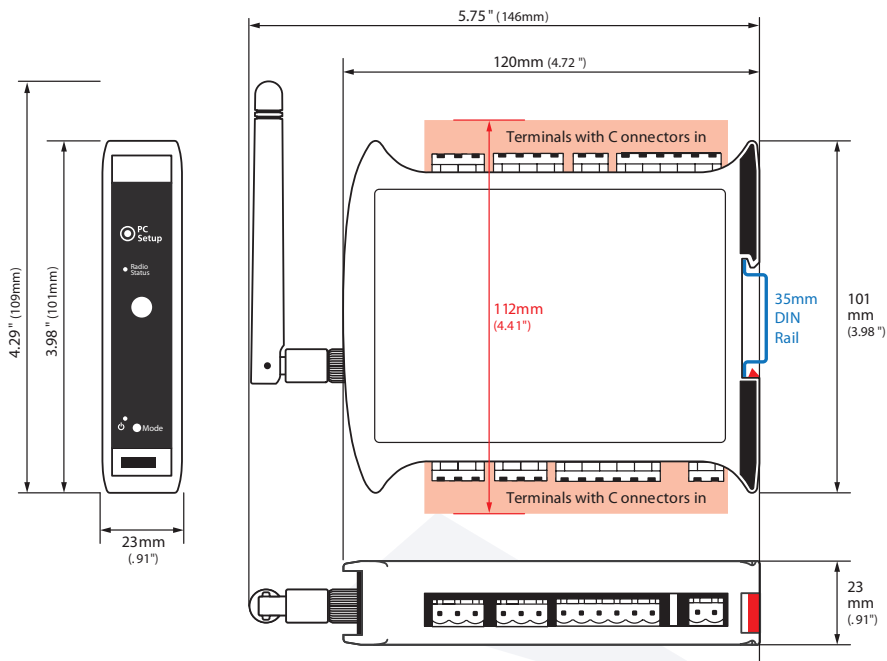### Compliance approvals

EN-61326-1:2006

EMC: EN61326-1: 2006 Class A
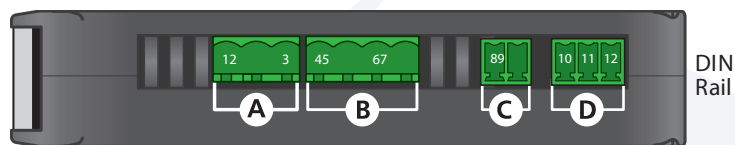
EN61326-1: 2006 Industrial Locations

EN50581: 2012 RoHS
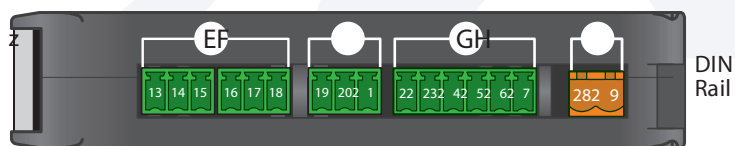
Safety: EN61010, 1:2010, CuL (file listing pending)

CASE DIMENSIONS

CONNECTORS

Color Label Facing Up

Color Label Facing Down

(A & B)		Relay outputs
(C)	L	ogic output open collector
(D)	R	S485 Port
(E)	A	nalog inputs
(F)		R232 Display Port
(G)	D	igital inputs
(H)	P	ower supply (HV shown)

WARRANTY

Gedge Systems warrants that its products are free from defects in material and workmanship under normal use and service for a period of five years from the date of shipment. Gedge Systems' obligations under this warranty are limited to replacement or repair, at its option, at it's factory, of any of the products which are returned to Gedge Systems' facility (within the applicable period after shipment), transportation charges prepaid, and which are, after examination, disclosed to the satisfaction of Gedge Systems to be defective.

Warranty does not apply to any equipment which has been repaired or altered, (except by Gedge Systems), or which has been subjected to misuse, negligence or accident. In no case shall Gedge Systems' liability exceed the original purchase price. The aforementioned provisions do not extend the original warranty period of any product which has been either repaired or replaced by Gedge Systems.