



GS NORTH AMERICA-TOTAL MACHINE CONTROL

# XHA Hi Amp Relay Module: CAN Controlled

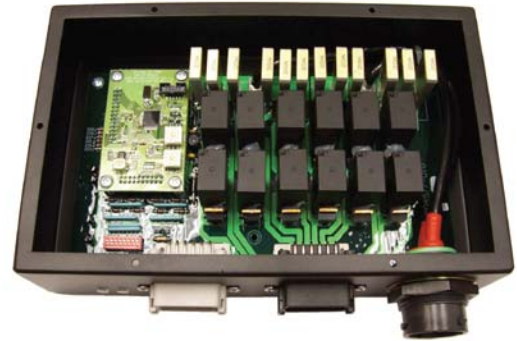
## Overview:

The High Current I/O module is a printed circuit board CAN bus module. The module is designed to be a node on a J1939 CAN bus and therefore can work on any J1939 or CAN Open system.

The XHA is functional 12 or 24 Volt mobile machine load control system. The module consist of 8 Digital Inputs which are individually selectable Sinking or Sourcing with DIP switch. Also, 12 Relay Outputs with over current protection. The outputs have diagnostics for open loads & blown fuses, tripped breakers, or faulty relay. A built in module temperature sensor allows for warning via CAN message. CAN addressing can be uniquely set via hardware settings with up to 100 unique addresses. A series of LED diagnostic indicators assist in module status. The XHA comes in two different housings with a "in cab" design and a external sealed enclosure as well.

The XHA uses the feature of advanced communication and monitoring technology with a traditional mechanical relay allowing the operator or mechanic not to feel overwhelmed if needing to interact with the module

XHA Cab Mounted Module



High Amp Output Module .

## Mechanical:

The XHA is in a custom steel housing which can be modified as needed for applications. Current design uses three Deutsch connectors for Power, Input, and Output connections.

The Input Power Connection is made via two 6/8 gauge input pins. Each input point feeds a bank of six relays for power distribution.

The outputs are protected by either traditional automotive fuses or circuit breakers, with manual or auto reset.

The Output relays are low resistance relays for minimal board heat transference. .

Outputs and traditional Inputs are conveyed via two DT series Deutsch connectors that are board mounted.

## System Features:

- High Amp Output Module 70 Amps@ 70 C
- CAN( J1939) Communication Monitoring with diagnostics for open loads & blown fuses, tripped breakers, or faulty relay
- 8 Digital Inputs either sinking or sourcing for the unit to allow
- 12 Relay Outputs up to 18 amps per Output temperature dependent.
- All Outputs have diagnostics for open loads & blown fuses, tripped breakers, or faulty relay operation via the CAN J1939 network.
- All outputs are protected via the Fuse/circuit breaker.

## Electrical:

CAN Protocol: SAEJ1939 or CAN Open  
CAN control allows for the interfacing to full machine control and monitoring of load functions of the system.

PGN numbers:

Outputs: 653xx

Inputs: 654xx

Where XX = Module address (00,01,02...98,99)

12 Output Socket Style Relays- Automotive Style:

Replaceable

Each Relay Circuit protected

8 Inputs allow for nodal use and control from the XHA unit as well.

## Electrical Features:

**Inputs:** 8 Digital Inputs Sinking or Sourcing

Sinking Input: Logic False = 4.0 to 30 VDC

Logic True = 0 to 1.5 VDC

Sourcing Input: Logic False = 0 to 2.0 VDC

Logic True = 4.0 to 30 VDC

**Outputs:** 12 Relays Micro size

20 Amp rating per Relay

Low Wattage Coil for reduced induced heat load

Low Contact Resistance for reduced action heat load



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## Electrical Specifications:

**Supply:** Range 9-30 VDC 12 volt (9 to 18Vdc) or 24 volt (+17Vdc +30Vdc) Transient voltage clamped above 36V Outputs have integral "Freewheeling" Diode

**Outputs:** 12 Relay Outputs individually protected via Circuit breaker. Outputs rated to Pin limitation. 13 Amps maximum with continuous outputs on 120 Degree C Pins  
Maximum Current per Module (Total all 12 outputs):  
80°F Ambient: 120 Amps Total Continuous Current\*  
100°F Ambient: 100 Amps Total Continuous Current\*  
120°F Ambient: 70 Amps Total Continuous Current\*  
\*Mounted to a Steel Surface

**Inputs:** 8 Digital Inputs individually selectable Sinking or Sourcing with DIP switch

**Circuit Protection:** Output Type Automotive Relay, Socket Mounted, Replaceable Output Protection ATO fuse or optional Type I, II, or III Circuit Breaker

Note Type I: continuous reset, Type II: power reset, Type III: manual reset

## Mechanical Specifications:

Housing: 6.5"x11.5"x2.6" ref drawing

### **Connector Type**

HDP24-28-6pn-c030 power receptacle

Connector "A" – Key DT 13 - 12PA

Connector "B" – Key DT 13 - 12PB

### **Mating Connector**

Mating Connector" A" – Key: Deutsch DT06-12SA

Mating Connector" B" – Key: Deutsch DT06-12SB

Mating Connector Supply – Key: Deutsch HDP26-18-6SN-C030

## Environmental Specifications

**Operating temperature:**- -40°C to +70°C (-40°F to +158°F)

**Storage temperature:**-55 to +100 Celsius

**Environmental protection:** IP65 (Housing Dependant)

**Vibration:** Level ± 3g, 10 Hz to 200 Hz  
(random@ 3.6g (rms))

**Shock:** 12g, 6mS, half sine profile

**EMI:** EMC immunity level:100 V/m, 2MHz to 1000 MHz, 1KHz 80 % sine wave modulation

## **Installation:**

**J1 Connector:** "A"-Key (Gray): (Mating Connector: Deutsch DT06-12SA)

Pin 1: Digital Input 1

Pin 2: Digital Input 2

Pin 3: Digital Input 3

Pin 4: Digital Input 4

Pin 5: Digital Input 5

Pin 6: Digital Input 6

Pin 7: Digital Input 7

Pin 8: Digital Input 8

Pin 9: Common

Pin 10: Common

Pin 11: J1939 CAN-L

Pin 12: J1939 CAN-H

**J2 Connector:** "B"-Key (Black): (Mating Connector: Deutsch DT06-12SB)

Pin 1: Digital Output 1

Pin 2: Digital Output 6

Pin 3: Digital Output 2

Pin 4: Digital Output 5

Pin 5: Digital Output 3

Pin 6: Digital Output 4

Pin 7: Digital Output 9

Pin 8: Digital Output 10

Pin 9: Digital Output 8

Pin 10: Digital Output 11

Pin 11: Digital Output 7

Pin 12: Digital Output 12

**J3 Connector:** (Mating Connector: Deutsch HDP26-18-6SN-C030)

Pin 3: +12/24 VDC Supply for Outputs 1, 2, 6, 7, 11, & 12

Pin 4: +12/24 VDC Supply for Outputs 3, 4, 5, 8, 9, & 10

## !!!!!!!!!!!!!!WARNING!!!!!!!!!!!!!!

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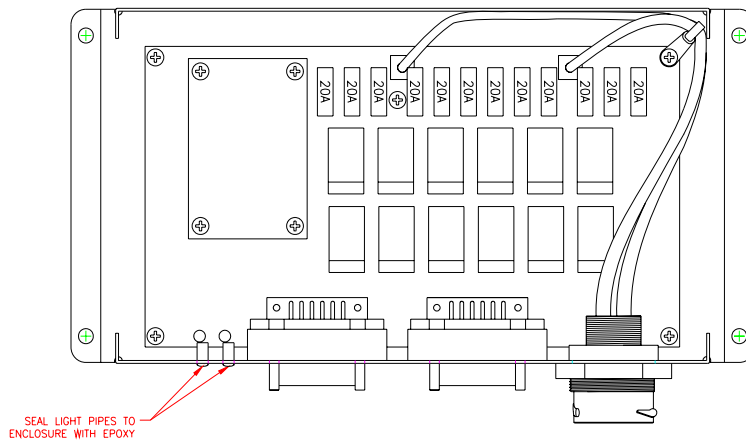
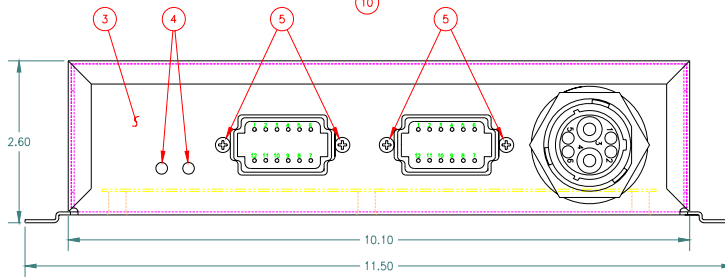
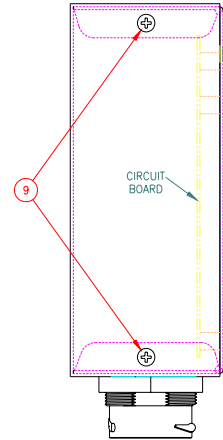
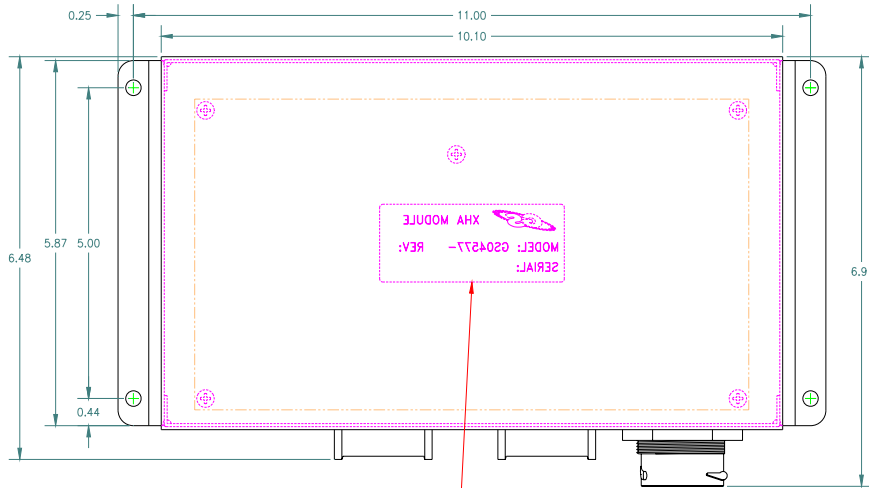
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