

C2 Protector Controller

Two Channel Alarm & Display Controller for Critical Monitoring Applications



- * Accepts one or two direct-connect local or remote sensors or 4-20mA
- * Large LCD display shows values, bar-graph and trend data
- * Two programmable 5A SPDT common relays for Alarm 1, Alarm 2, Horn or FAULT
- * Optional 6x relay board for per-channel SPDT contacts
- * Optional dual channel 4-20mA board for current loop output
- * Operates on either +24VDC or 117/240VAC 50/60Hz
- * ACK button silences HORN without affecting alarm relays
- * Relay voting logic reduces need for external hardware
- * Touch and magnetic keys for non-intrusive operation in XP areas
- * Pushbutton zero and span calibration for directly connected sensors
- * NEMA 4x approved for Class 1 Div 2 area without purge
- * MODBUS® slave port for easy interface from master devices
- * CSA certified to C22.2 No 152 for combustible gas detection and approved for Class 1, Div 2 Groups A, B, C, D



Available in NEMA 4X fiberglass or NEMA 7 explosion proof wall mount

The C2 Protector Display & Alarm Controller provides signal conditioning, display and alarm functions for one or two critical input variables.

Versatile

Designed to provide low-cost direct monitoring for one or two gas sensors or flame detectors, the C2 Protector controller offers a highly-integrated, complete solution for detection of hazardous conditions. Versatile input signal conditioning options allow direct connection of any GDS Corp electrochemical sensor, and local or remote support for any GDS Corp combustible, PID or infrared sensor. Both channels can be configured to accept analog inputs from sources such as the GDS-49 Sensor Transmitter, GDS-IR Point Infrared Gas Detector or any standard 4-20mA source.

Additional C2 options include 5A SPDT discrete relays, 4-20mA outputs, light stacks and audible annunciators.

One popular application for the C2 is as a dual gas detector equipped with one local

combustible sensor and one local toxic sensor. Alternatively, two combustible locations may be monitored with one sensor local and another remote.

Real-Time Display

A large graphic LCD screen displays input data as calibrated engineering units, bar-graphs or 30-minute trends. Three adjustable alarm levels per channel, combined with programmable relays with voting logic allows flexible control of beacons, horns and other warning devices. Highly visible red and yellow LEDs visually indicate alarm status at all times.

Digitally Connected

An optional RS-485 MODBUS® slave port allows multiple C2 controllers to be multi-dropped on a single data highway. The C2 Protector controller is also 100% compatible with the ProtectorHMI Visualization and Historian software that can monitor, display and record data from up to ten C1 Protector or C2 Protector controllers.

Reliability

The C2 Protector controller is CSA certified to CSA C22.2 No. 152 for combustibles and Class I, Division 2, Groups A, B, C, D for use in hazardous areas. An optional NEMA 7 enclosure allows use in Class I Div 1 areas. Up to seven watts of 24 VDC power is available for auxiliary devices or transmitters.

GDS Corp

Gas and Flame Detection

2513 Hwy 646

Santa Fe, Texas 77510

409-927-2980 • 409-927-4180 (fax)

www.gdscorp.com • info@gdscorp.com

C2 Protector SPECIFICATIONS	
Power Input	24VDC (12 Watt MAX) 85-240 VAC power supply included
Display	Backlit 128x64 pixel LCD shows trend, bargraph and engineering units; flashing alarm LEDs indicate alarm status
Input	Inputs available for dual catalytic bead LEL, dual toxic / O ₂ , one each catalytic bead & toxic / O ₂ , and dual 4-20mA
MODBUS I/O	Optional slave mode RS-232 or RS-485 MODBUS half or full duplex port
Relay Output	Two common output relays configurable for A1, A2, FAIL & HORN ; 5A @ 30VDC / 240VAC resistive load
Analog Output	Optional dual channel 4-20mA current loop. Max loop R is 800 ohms with nominal 24VDC
Audible Output	Optional 100db alarm (NEMA 4X only)
Temp	-25°C to +50°C operating
Housing	NEMA 4X / IP66 wall-mount approved for Class 1 Div 2 Groups A, B, C, D NEMA 7 wall-mount approved for Cls 1 Div 1 Groups B, C, D
Dimensions	NEMA 4X: Width 8.9" (226 mm); Height 10.3" (262 mm); Depth 3.2" (81 mm)
Approvals	CSA C22.2 No. 1010.1 & 152 for combustibles & ISA S82.02; UL 1604 / C22.2 No 213 (NEMA 4X = Div 2 Groups A, B, C, D; NEMA 7 = Div 1 Groups B, C, D) EN55011 & EN61000 (CE Mark)
Warranty	2 years from date of purchase on electronics and one year on sensors

SENSOR TYPES					
10	Oxygen (0-25)	-30 to +55C	27	Hydrazine (0-1)	-10 to +40C
11	Carbon Monoxide (0-300)	-30 to +50C	28	Nitric Oxide (0-50)	-20 to +50C
12	Chlorine (0-5) ⁶	-20 to +50C	29	Nitrogen Dioxide (0-100)	-20 to +50C
13	Chlorine Dioxide (0-1) ⁶	-20 to +40C	30	Mercaptan TBM (0-15)	-10 to +40C
14	Hydrogen (0-2000)	-20 to +50C	31	Tetrahydrothiophene (0-100)	-10 to +40C
15	Hydrogen Sulfide (0-100)	-30 to +50C			
16	Hydrogen Cyanide (0-50)	-20 to +50C	50	SmartIR 0-100% LEL (Methane)	-20 to +50C
17	Hydrogen Chloride (0-30) ⁶	-20 to +50C	51	SmartIR 0-100% LEL (Propane)	-20 to +50C
18	Hydrogen Fluoride (0-10) ⁶	-20 to +50C	53	SmartIR 0-100% v/v (Methane)	-20 to +50C
19	Sulfur Dioxide (0-25)	-30 to +50C	53	SmartIR 0-5% v/v CO ₂	-20 to +50C
20	Ammonia (0-100)	-20 to +40C			
21	Ozone (0-1)	-20 to +40C	61	PID Low (0-50 ppm ISOB)	-40 to +60C
22	Ethylene Oxide (0-20)	-20 to +50C	62	PID High (0-300 ppm ISOB)	-40 to +60C
23	Arsine (0-1)	-20 to +40C	70	Catalytic Bead 0-100% LEL	-40 to +65C
24	Silane (0-50)	-20 to +40C	90	4-20mA input	-40 to +60C
25	Fluorine (0-1)	-10 to +40C	95	GDS-IR 0-100% LEL (Methane)	-40 to +65C
26	Phosgene (0-1)	-20 to +40C	96	GDS-IR (other)	-40 to +65C



2513 Hwy 646
 Santa Fe, Texas 77510
 409-927-2980 • 409-927-4180 (fax)
 www.gdscorp.com • info@gdscorp.com

Toxic & Combustible Gas Detection • Controllers • Process Monitors • Calibration Supplies

C2 Protector Order Guide	
C2 A - B - C / D - E - F / G - H - I - J - K / L	
“A” & “D”	SENSOR HEAD 1 = Local DELRIN sensor head with integrated sensor 2 = Remote stainless steel sensor head with junction box 3 = Remote SS sensor head for with junction box & splash guard 4 = Local stainless steel sensor head with replaceable sensor 5 = Local SS sensor head with replaceable sensor & splash guard 6 = Local aluminum sensor head with replaceable sensor 7 = Local AL sensor head with replaceable sensor & splash guard 10 = Remote mount for GDS-IR Infrared Sensor
“B” & “E”	SENSOR TYPE (see chart) ⁴ Any combination can be chosen for “B” and “E”
“C” & “F”	DETECTION RANGE ³ 1 = 0 - 1 5 = 0 - 50 2 = 0 - 5 6 = 0 - 100 3 = 0 - 10 7 = 0 - 500 4 = 0 - 25 8 = 0 - 1000 9 = Custom (contact factory)
“G”	1 = Add discrete relay board with six additional 5A relays
“H”	1 = Add dual channel 4-20mA analog output board
“I”	1 = Add RS-485 / RS-232 MOD-BUS serial interface
“J”	1 = Add 100db audible alarm
“K”	1 = Add C1 D2 Red Strobe 2 = Add NR Strobe (spec color)
“L”	0 = Standard NEMA 4X 1 = NEMA 7 XP enclosure 2 = Stainless steel enclosure 3 = Fiberglass enclosure

NOTES
Note 1: Remote mounted electrochemical sensors are not supported. Use GDS-49 sensor transmitter
Note 3: Standard ranges are shown; contact factory for additional options
Note 4: If electrochemical and catalytic bead sensors are combined, then echem must be channel 1 and cat bead must be channel 2
Note 6: Some highly reactive gases require aluminum sensor head without flame arrestor