 HEINZMANN®
thinking in drive and control

Opal 2

DATA SHEET

Models

Opal 2 Turbine Annunciator is
available in 2 variations:

Opal 2 Annunciator

Remote Display and Electrical
Overspeed Protection

Opal 2 Annunciator
with Monitoring

Remote Display and Electrical
Overspeed Protection with Turbine
Monitoring

Key features

Remote display of
Si-TEC *Xtend* CGC (via
CAN bus)

Electrical overspeed
protection function,
with overspeed test
sequence (via keypad)

Metering of essential
generator parameters
and turbine speed

Temperature metering
(via temperature
scanner module)

Turbine monitoring
(including inlet
pressure, exhaust
pressure, etc.)

Range of alarm
functions and logic
status

Easy navigation of
parameters via keypad
(with Opal, CGC, etc.)

Auto scroll function for
temperature channel
parameters

Description

Si-TEC (Smart Integrated Turbine & Engine Control) is the world's only
digital governor fully integrated with an automatic synchroniser and kW /
kVAr control, and was developed in 1991.

With more than 4000 systems now in operation globally, the Si-TEC *Xtend*
control provides a further enhancement of this already successful product.

The Opal 2 Annunciator is typically used in conjunction with Si-TEC *Xtend*
CGC control module for steam turbine generator applications including
power stations, sugar mills, paper mills, process plants, refineries, etc..

Features

- Remote display of the Si-TEC *Xtend* control (via CAN bus interface), and designed for mounting on system control panel. A '4-line' LCD screen allows operators to view actual and reference values of the Si-TEC *Xtend* CGC control. Also includes specific menu keys on the "Generator" keypad.

- Turbine overspeed protection. The overspeed protection feature is independent of the Si-TEC *Xtend* CGC control (via separate MPU speed sensor), and also includes a "Perform Overspeed Test" function, along with "Mechanical Overspeed Testing" feature.

- Metering of essential generator parameters that include generator "Voltage", "Frequency", "Real Power", "Power Factor" (lag & lead). This reduces the need for conventional meters and transducers.

- Metering of "Turbine Speed" as well as turbine and generator temperature (via Si-TEC Temperature Scanner) for integration of turbine monitoring

- Alarms (relay outputs) including audible, visual, pre-warn & shutdown. Status (discrete inputs) includes standard (turbine monitoring) as well as user selected functions.

- Turbine monitoring features including inlet pressure, exhaust pressure, lube oil pressure and control voltage. These are configurable via software or front keypad (password protected).

- Easy navigation of various devices (e.g. CGC, Opal, temp. scanner, etc.) through "Device Select" and navigation keys

- Auto scroll function for easy temperature viewing for up to 32 channels

Application range

Used with Si-TEC *Xtend* CGC control in sugar, mining and general industry, remote communities, hospitals and commercial buildings, marine & shipping, defence & telecommunications facilities, refining and petrochemical industry, as well as the oil & gas industry.
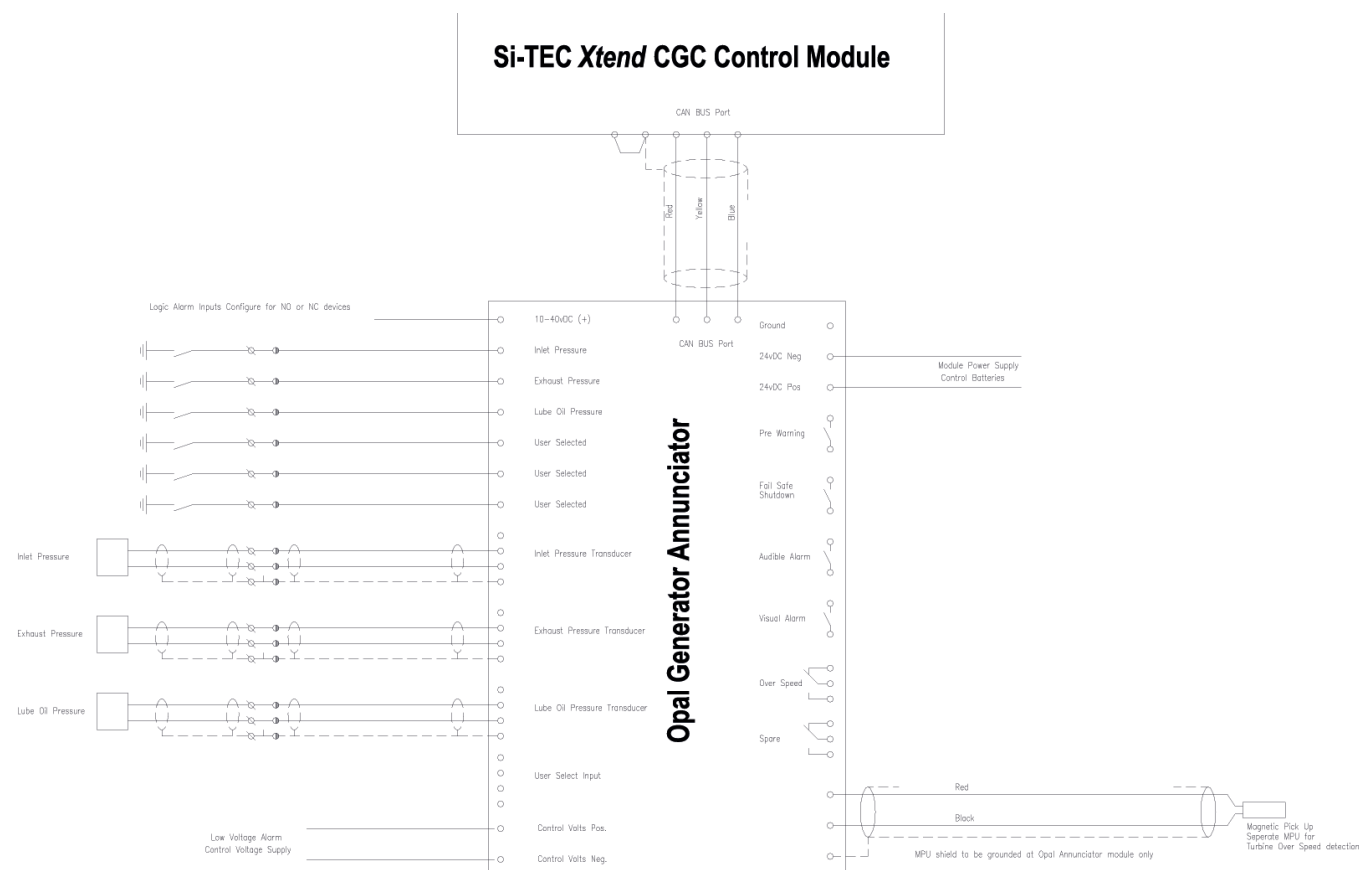
Inputs/outputs

- Power supply: 24 Vdc. nominal (18 – 32 VDC)

- MPU input: Dedicated speed sensor for protection (200 Hz – 20 kHz range)

- Voltage input: For "Control Voltage" monitoring (18 – 32 VDC)

- Inlet pressure: 4 – 20 mA input (configurable)

- Exhaust pressure: 4 – 20 mA input (configurable)

- Lube oil pressure: 4 – 20 mA input (configurable)

- User selected input: 4 – 20 mA input (configurable)

- 6 x status (logic) inputs with + 24 VDC common. These include inlet pressure, exhaust pressure, lube oil pressure, and 3 x oser selected inputs.

- 6 x alarm (relay) outputs including 2 x change-over relays (overspeed and spare) and 4 x NO contact relays (pre-warn, shutdown, audible and visual)

- CAN bus port: Up to 125m (250 kbps) loop length

Note: 4-20mA loop signals from PLC/DCS must be from the same source that supplies Opal and transducer. Otherwise, a signal line isolator must be used.

Keypad functions

- Common "MENU" keypad section include typical select and navigation keys, "Store", "+", "-", "Device Select" and "Engine/Turbine"

- "Generator" (Si-TEC *Xtend* CGC) keypad menu functions include "Home", "Go To", "Access", "Control", "Station", "Generator", "Help", "Alarm", "Actuator" & "Peak Hold"

- Common keypad functions "Silent Keypad", "Bump", "Auto Scroll" and "Reset"

- "Perform OST" (overspeed test function with password protect) and "Override OST" (for mechanical overspeed testing)

Opal Generator Annunciator Interface

Si-TEC *Xtend* CGC Control Module

CAN BUS Port

Red Yellow Blue

Logic Alarm Inputs Configure for NO or NC devices

10-40vDC (+)	Ground
Inlet Pressure	24vDC Neg
Exhaust Pressure	24vDC Pos
Lube Oil Pressure	Pre Warning
User Selected	Fail Safe Shutdown
User Selected	Audible Alarm
User Selected	Visual Alarm

CAN BUS Port

Module Power Supply
Control Batteries

Inlet Pressure → Inlet Pressure Transducer

Exhaust Pressure → Exhaust Pressure Transducer

Lube Oil Pressure → Lube Oil Pressure Transducer

Opal Generator Annunciator

Over Speed

Spare

User Select Input

Control Volts Pos.

Low Voltage Alarm
Control Voltage Supply

Control Volts Neg.

Red

Black

Magnetic Pick Up
Seperate MPU for
Turbine Over Speed detection

MPU shield to be grounded at Opal Annunciator module only

Opal physical dimensions (mm) - front & side view

305
72.5   160   72.5

72.5

305
160

72.5

MOUNTING BOLTS
8 x M4 BOLTS

279

279

PANEL WALL

226

52
75

Front View
(Cut Out is 254 x 254 mm)

Side View