

SmartNet-100 Fire Alarm Interface Unit

Part Number: S1.IOU00.1

Interface with Two Inputs & Two Outputs

The Cygnus SmartNet wireless fire detection and alarm system is a network of battery powered, wireless fire detection and alarm products suitable for permanent installations, commercial premises and HMOs.

The Fire Alarm Interface interfaces with Cygnus devices and other fire systems, sensors, detectors and switched power, having two configurable inputs and two outputs.

Other products in the range include Control Panels, Smoke and Heat Detectors, Sounders, Beacons and Manual Call Points.



Overview

- Reliable wireless mesh radio technology
- Inputs and outputs designed for connection using 20mm glands
- Sensitive radio with up to 750m range
- 868MHz radio (915MHz also available)
- Rugged design for outdoor use
- 3+ year battery life
- Designed to be EN 54 compliant
- Certified by Intertek
- Easy configuration via the Windows based CygnusConfig application
- Compatible with other Cygnus SmartNet devices

Features

Digital inputs	Two
Outputs	Two
Tamper switch	Lid
Cable glands	IP65 or IP33C min.
Cable gland type	Four 20mm or 16mm compression
Cable gland hole size	20mm hole or 16mm hole (use drilling template)

Parameters

Dimensions (mm)	230h x 125w x 61d
Weight	780g
Operating temperature	-25°C to +70°C
Storage temperature	-25°C to +70°C
IP rating	IP65 and IP33C, Type B (Outdoor)
Relative humidity	>95% @ 25°C to 55°C

Power	
Operating voltage range	2.5 to 3.8V (from lithium batteries)
Main battery	3x ER26500 Li-SOCl ₂ (lithium thionyl chloride)
Backup battery	1x CR123 (must be fitted)
Battery Voltages	ER26500 = 3.6V nom. CR123 = 3.0V nom.
Power consumption	3mW
Battery life	Min 3 years (normal operation)

Radio	
Radio operating frequency	865 to 868 MHz
Radio category	Category 1
Channels	10 (with channel hopping algorithm)
Bandwidth	250kHz
Channel spacing	300kHz
Transmit power	10mW (maximum)
Duty cycle	<0.1%
Protocol	Cygnus mesh protocol
Encryption	TDES (64-bit payload, 192-bit encryption key)
Self-forming	Cygnus self-forming algorithm
Self-healing	Cygnus self-healing algorithm

Compliance

Current:

- ETSI EN 300 220-1 V3.1.1 (2017-02)
- ETSI EN 301 489-1 V2.2.2 (2019-09)
- ETSI EN 301 489-3 V2.1.1 (2019-03)
- EN61000-6-3:2007 +A1:2011
- EN50130-4:2011 +A1:2014
- EN61000-3-2:2014
- EN61000-3-3:2013



- EN 54-18:2005
- EN 54-25:2008

IO Functions (for EN 54-18:2005)

Inputs:

- Radio messaging from other devices
- Lid tamper switch
- Two digital inputs (see below)

Note: Inputs must not be supplied with a voltage. Points 'A' and 'B' must be shorted together to activate the inputs.
Inputs are fault monitored and a fault will appear if the termination resistors are not fitted. Please connect as shown in the diagram below.
If an input is unused, please fit a 4.7 k

Outputs:

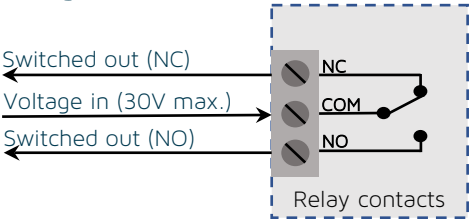
- Radio messaging to other devices
- Two digital outputs (see below)

Note: Outputs must be supplied with external power to the relay contacts (no power is available from the batteries fitted to this device).
Outputs are operated from the control panel and configured using the CygnusConfig application.

Two digital inputs	Short together for activation (termination resistors required)
Two outputs	NO, COM, NC dry contacts
Contacts Current Rating	2A @ 30V DC max.
Contacts Power Rating	60W max.

Note: All Inputs and Outputs operate independently

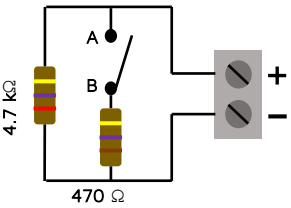
Output Wiring Connection



NC	Normally Closed Relay Contact
COM	Common Relay Contact
NO	Normally Open Relay Contact

Input Wiring Connection

4.7 kΩ resistor	This is an end-of-line termination resistor, so must be connected to the furthest point of the wiring. 4.7 kΩ is also 4,700Ω.
470 Ω resistor	This is a series resistor which must be connected in series with a switch or relay contacts



Input Connection

+	High-side input (do not apply a voltage to this terminal)
-	Low-side input (do not apply a voltage to this terminal)

Input States

Open contact (A and B)	Input inactive	
Closed contact (A and B connected / switch closed)	Input activated	
Open circuit state	No resistance present (4.7 k resistor missing or wire cut)	
Short circuit state	Plus, and minus terminals shorted together	