

# ***Remote Display Unit***

## **Installers Handbook**

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## ***Description***

The Stratos SenseNet Remote Display Unit (RDU) is designed for installation in an industry standard 19" rack enclosure. The unit will mimic the display of a Stratos detector connected to it on the SenseNET bus which is an RS485 data highway. A bank of switches selects the detector whose display is to be repeated.

The unit is powered from a 24V DC nominal power supply. Power is distributed internally from an isolated converter.

## ***Construction***

The unit consists of a metal front panel plate covered with a self-adhesive graphics overlay and a main PCB that has LEDs mounted through holes in the front panel. The main PCB has terminals for the power supply input and connection to the RS485 data highway.

An additional PCB provides volt-free relay contacts. These relays mimic the action of the signal relays within a detector, or the input states of a contact monitor. This additional relay board is mounted on the main board using stand-offs.

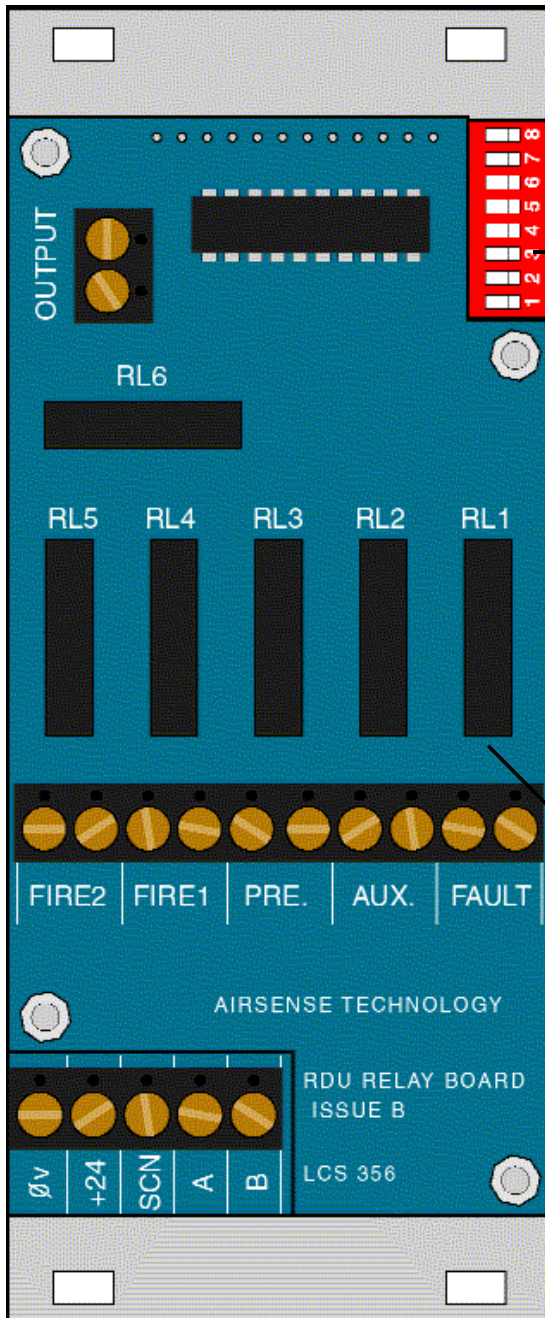
## ***Installation***

The RDU should be mounted in a 19" rack enclosure.

RS485 wiring should be made using screened twisted pair cable. The cable screens should be connected locally and not to power supply 0V or to mains earth.

The RS485 connections form part of an Airsense Technology Ltd SenseNET Bus. All other devices on this bus must have an isolated RS485 port.

The unit contains static sensitive devices. Precautions must be taken during installation.



### **Remote Display Unit (RDU) - main board**

The address switch on the RDU should be set to the same address as the *Stratos-HSSD*<sup>®</sup> or *Stratos-Quadra*<sup>®</sup> whose display is to be repeated.

Because the RDU only monitors, multiple RDU's can be set up to display the status of one detector.

If no bus master or PC is to be used on the system then set switch 8 on to get the RDU to poll the detector. If multiple RDU's are used only set one RDU to poll.

The RDU requires a 24 VDC power supply and is designed to be fitted into a 3u 19-inch rack frame. Eight RDU's will fit across a single 3u high frame.

### **Remote Display Unit - relay board**

The optional relay board provides separate relay outputs for all the alarm levels of the *Stratos-HSSD*<sup>®</sup> detector driving a particular RDU.

Once the relay board is connected to the RDU (which must be powered off first) operation is completely automatic.

Relay contacts are provided for each alarm level plus a normally energised common fault relay.

## **Using an RDU to show common detector status**

Setting an RDU to address 0 will configure it to display the common alarm and fault status for all detectors. No bargraph indication will be shown when the RDU is set to the common address.

If a relay board is fitted to an RDU set to address 0 then the relays will indicate common alarm and fault relays for all detectors.

**Note: This signal is sent from the command module and is only available when a hardware command module is being used in the system.**

## ***Cabling***

The SenseNET data cable should be 120Ω screened twisted pair such as Belden 9841 24 AWG.

The RDU, unlike the Stratos-HSSD 2 detector, has no repeater built in so the maximum length of cable that can be connected to a RDU 1.2 is kilometres.

An optional repeater unit is available if a longer cable run then 1.2 kilometres is unavoidable.

## **Connections**

0V	Power supply 0 Volts. This must NOT be connected to data SCN.
+24V	Power supply 24 Volts input.
SCN	Data cable screen.
A	Data loop A circuit.
B	Data loop B circuit.

## ***Power supplies***

The power requirement for the RDU is 40mA max at 24 Volts  $\pm$  10%. Failure of the power supply to the RDU will cause the fault relay contact to open (if the optional relay card is fitted).

## Appendix A - Address table

Address	1	2	3	4	5	6	7	8
1	1	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0	0
3	1	1	0	0	0	0	0	0
4	0	0	1	0	0	0	0	0
5	1	0	1	0	0	0	0	0
6	0	1	1	0	0	0	0	0
7	1	1	1	0	0	0	0	0
8	0	0	0	1	0	0	0	0
9	1	0	0	1	0	0	0	0
10	0	1	0	1	0	0	0	0
11	1	1	0	1	0	0	0	0
12	0	0	1	1	0	0	0	0
13	1	0	1	1	0	0	0	0
14	0	1	1	1	0	0	0	0
15	1	1	1	1	0	0	0	0
16	0	0	0	0	1	0	0	0
17	1	0	0	0	1	0	0	0
18	0	1	0	0	1	0	0	0
19	1	1	0	0	1	0	0	0
20	0	0	1	0	1	0	0	0
21	1	0	1	0	1	0	0	0
22	0	1	1	0	1	0	0	0
23	1	1	1	0	1	0	0	0
24	0	0	0	1	1	0	0	0
25	1	0	0	1	1	0	0	0
26	0	1	0	1	1	0	0	0
27	1	1	0	1	1	0	0	0
28	0	0	1	1	1	0	0	0
29	1	0	1	1	1	0	0	0
30	0	1	1	1	1	0	0	0
31	1	1	1	1	1	0	0	0
32	0	0	0	0	0	1	0	0
33	1	0	0	0	0	1	0	0
34	0	1	0	0	0	1	0	0
35	1	1	0	0	0	1	0	0
36	0	0	1	0	0	1	0	0
37	1	0	1	0	0	1	0	0
38	0	1	1	0	0	1	0	0
39	1	1	1	0	0	1	0	0
40	0	0	0	1	0	1	0	0
41	1	0	0	1	0	1	0	0
42	0	1	0	1	0	1	0	0
43	1	1	0	1	0	1	0	0
44	0	0	1	1	0	1	0	0
45	1	0	1	1	0	1	0	0
46	0	1	1	1	0	1	0	0
47	1	1	1	1	0	1	0	0
48	0	0	0	0	1	1	0	0
49	1	0	0	0	1	1	0	0
50	0	1	0	0	1	1	0	0
51	1	1	0	0	1	1	0	0
52	0	0	1	0	1	1	0	0
53	1	0	1	0	1	1	0	0
54	0	1	1	0	1	1	0	0
55	1	1	1	0	1	1	0	0
56	0	0	0	1	1	1	0	0
57	1	0	0	1	1	1	0	0
58	0	1	0	1	1	1	0	0
59	1	1	0	1	1	1	0	0
60	0	0	1	1	1	1	0	0
61	1	0	1	1	1	1	0	0
62	0	1	1	1	1	1	0	0
63	1	1	1	1	1	1	0	0
64	0	0	0	0	0	0	1	0

65	1	0	0	0	0	0	1	0
66	0	1	0	0	0	0	1	0
67	1	1	0	0	0	0	1	0
68	0	0	1	0	0	0	1	0
69	1	0	1	0	0	0	1	0
70	0	1	1	0	0	0	1	0
71	1	1	1	0	0	0	1	0
72	0	0	0	1	0	0	1	0
73	1	0	0	1	0	0	1	0
74	0	1	0	1	0	0	1	0
75	1	1	0	1	0	0	1	0
76	0	0	1	1	0	0	1	0
77	1	0	1	1	0	0	1	0
78	0	1	1	1	0	0	1	0
79	1	1	1	1	0	0	1	0
80	0	0	0	0	1	0	1	0
81	1	0	0	0	1	0	1	0
82	0	1	0	0	1	0	1	0
83	1	1	0	0	1	0	1	0
84	0	0	1	0	1	0	1	0
85	1	0	1	0	1	0	1	0
86	0	1	1	0	1	0	1	0
87	1	1	1	0	1	0	1	0
88	0	0	0	1	1	0	1	0
89	1	0	0	1	1	0	1	0
90	0	1	0	1	1	0	1	0
91	1	1	0	1	1	0	1	0
92	0	0	1	1	1	0	1	0
93	1	0	1	1	1	0	1	0
94	0	1	1	1	1	0	1	0
95	1	1	1	1	1	0	1	0
96	0	0	0	0	0	1	1	0
97	1	0	0	0	0	1	1	0
98	0	1	0	0	0	1	1	0
99	1	1	0	0	0	1	1	0
100	0	0	1	0	0	1	1	0
101	1	0	1	0	0	1	1	0
102	0	1	1	0	0	1	1	0
103	1	1	1	0	0	1	1	0
104	0	0	0	1	0	1	1	0
105	1	0	0	1	0	1	1	0
106	0	1	0	1	0	1	1	0
107	1	1	0	1	0	1	1	0
108	0	0	1	1	0	1	1	0
109	1	0	1	1	0	1	1	0
110	0	1	1	1	0	1	1	0
111	1	1	1	1	0	1	1	0
112	0	0	0	0	1	1	1	0
113	1	0	0	0	1	1	1	0
114	0	1	0	0	1	1	1	0
115	1	1	0	0	1	1	1	0
116	0	0	1	0	1	1	1	0
117	1	0	1	0	1	1	1	0
118	0	1	1	0	1	1	1	0
119	1	1	1	0	1	1	1	0
120	0	0	0	1	1	1	1	0
121	1	0	0	1	1	1	1	0
122	0	1	0	1	1	1	1	0
123	1	1	0	1	1	1	1	0
124	0	0	1	1	1	1	1	0
125	1	0	1	1	1	1	1	0
126	0	1	1	1	1	1	1	0
127	1	1	1	1	1	1	1	0

## **Appendix B - Specification**

### **RDU board**

Nominal operating Voltage:	24 Volts $\pm$ 10%
Maximum input Voltage range:	18 to 30 Volts DC
Maximum operating current:	40 mA
Operating temperature range:	-10 to +60 °C
Storage temperature range:	-25 to +85 °C
Operating humidity range:	0 to 90 % non-condensing

### **Relay card**

Maximum switching Voltage:	200 Volts DC
Maximum switching current:	0.5 A
Minimum life expectancy:	1 x 10 <sup>8</sup> activations
Maximum contact resistance:	100 milliohms

### **Isolation and Product Safety Strategy - IEC 950**

All power will be supplied via a purpose made supply built to EN54 or equivalent. This supply will incorporate isolation sufficient that its outputs are SELV.

System interconnections will therefore be SELV whether floating or not.

Relays will be fully isolated as capable of connection to any external circuit.

Bus interfaces will not be isolated and it will be the responsibility of the installer to provide sufficient isolation in connected equipment.

Enclosures will be earthed either through its mounting or by use of shielded supply cabling.

### **Electrical Interfaces**

Terminals.

Type:	Screw terminals M3
Maximum wire size:	2.5mm <sup>2</sup>

## ***Appendix C - Troubleshooting***

<b>symptom</b>	<b>probable cause</b>
RDU is dead (no lights and fault relay open)	Input Voltage missing or too low
RDU shows fault but the detector shows OK	The RDU is not receiving data. Check cabling and set the RDU to poll the detector if necessary. Check the address switch.