9469-ET

108Mbps Wireless Bridge/Access Point

Instruction Manual

INM9469

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9469-ET IS Wireless Access Point/Bridge

INM9469-2
May 2010

1. FEATURES

- Intrinsically Safe ATEX / IECEx certified / FM / FMC approved
- Ga Ex ia IIC T4 GD (surface), Ma Ex ia I M1 (mining)
- Zone 1 / Division 1 mounting in a suitable enclosure
- Input voltage: 12V dc (10 – 12.8V)
- Input current: 270mA
- Extended temperature range (–20°C…+60°C)
- PoEx™ - "Power over Ethernet" powered device option - accepts module supply via the Cat5e cable*
- 10/100Mb Ethernet twisted pair (Cat5e) RJ45 Connection (100m max)
- IEEE 802.11 a/b/g/h & Super AG standards, up to 108 Mbps data rate
- Security: WEP, WPA-PSK, WPA2-PSK and IEEE 802.1X (RADIUS)
- Access Point, Bridge and Wireless Repeater (WDS) Modes of Operation
- Easy web based configuration
- Status LED's For:
  - 'Power On'
  - WLAN ' Activity'
  - Copper UTP 'Activity'
  - Copper UTP '10/100Mb Link'
- DIN-rail mounting module

**Note – PoEx is a simple adaptation of the IEEE 802.3af Power over Ethernet (PoE) standard to bring the benefits to the 9400 Range of Hazardous Area devices. This allows two spare pairs in the existing Cat5e cable to distribute the power supply from a 9466 Ethernet Switch (Power Sourcing Equipment – PSE) to each of the devices connected to its five ports (PD – Powered Device). This adaptation is necessary due to restrictions for Hazardous Area use. It is not implied that the device conforms to the 802.3af (PoE) standard.*

2. DESCRIPTION

The 9469-ET 108Mbps Wireless Bridge / Access Point is a dual functionality module. When used in the Access Point (AP) mode, it allows wireless devices to connect through it onto the wired Ethernet network, either in Ad-hoc or Infrastructure modes. When used as a Bridge, it makes it possible to turn any 10/100 Ethernet device into a wireless device, or to connect two network segments together to make a single network (without the interconnecting wire or fibre optic). Additionally the module may also be used in its Wireless Repeater (WDS) mode to extend the range covered by a wireless network.

The Tri-Band operation offers flexibility in situations where the 2.4GHz band may be overcrowded or where operation in the 5GHz and 5.4GHz bands is desired. The unit supports 802.11d (multi-country roaming) to allow its use globally while complying with regulatory limits.

3. INSTALLATION

WARNING: This equipment must be installed, operated and maintained only be trained competent personnel and in accordance with all appropriate international, national and local standard codes of practice and site regulation for intrinsically safe apparatus and in accordance with the instructions contained here. *See also Sections 14, 15 & 16 for approvals and important conditions of safe use.*

3.1 Protection

The module requires mounting within an enclosure providing a degree of protection of at least IP6x, in accordance with EN60529 and in a manner that does not impair the existing creepage and clearance distances. The enclosure must also comply with the requirements of Clauses 7 and 8 of EN 60079-0:2006 and be sealed to prevent the ingress of dust.

3.2 Mechanical mounting

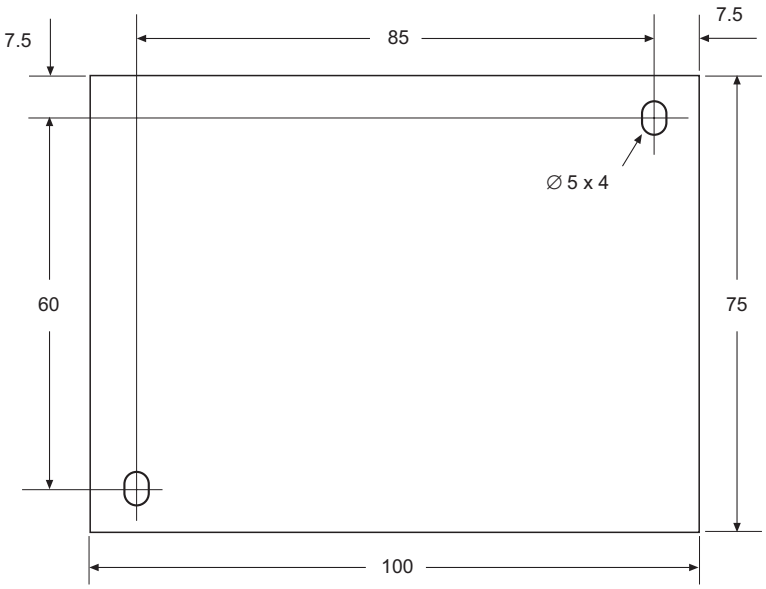
3.2.1 DIN rail mounting

The module will 'snap-fit' onto standard DIN rail (TS35) to EN 50022. Height off rail - including connectors but excluding cables = 119mm.

Tilt the module to engage the top DIN rail clips then rotate down and press to the DIN rail until the lower spring clip is properly engaged.

3.2.2 Flat panel mounting

The module has two fixing holes to enable it to be mounted with two M3.5 screws. Use the template below to establish hole positions. Depth - including connectors but excluding cables = 124mm.

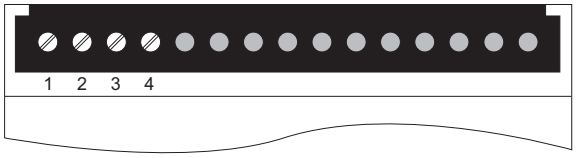


3.3 Electrical connections

DC power can be supplied to the equipment through the front panel screw terminals or alternatively using the Power over Ethernet (PoEx) option where DC power is supplied from a 9466-ET module down the Ethernet Cat5e (or Cat6) cable into the RJ45 connector on the front panel.

WARNING: Whichever wiring method of powering the modules is used, the supply to them must be derived from a suitably certified, intrinsically safe supply.

3.3.1 Front Panel Screw Terminals



Terminal No.	Function	
1	+12V dc in	When using PoEx – no supply is required on these terminals.
2	+12V dc in	
3	0V	
4	0V	
5–15	No connection	

Note: 1. Terminals 1 & 2 and 3 & 4 are linked internally

3.3.2 Front Panel RJ45 Connectors

10/100 BASE-T Ethernet with TX/RX Crossed MDI-X

Pin No.	Function	
1	RX +	When using PoEx – no supply is required on screw terminals 1 to 4 - see above.
2	RX –	
3	TX +	
4	Supply 12V - PoEx	
5	Supply 12V - PoEx	
6	TX –	
7	Supply 0V - PoEx	
8	Supply 0V - PoEx	

1. When connecting the Cat5e cable to another device a straight connected RJ45 cable is used, a crossover cable is not required as the RJ45 connector performs the crossover.
2. It is recommended that Cat5e cables for Hazardous Area Zone 1 use are 'Blue' in colour and are of good quality (see Accessories section), the Safe Area cables being a colour other than blue to aid identification.

3.3.3 WiFi - TNC – Antenna Connections

Main Port Antenna 1

Aux Port Antenna 2

Allows the connection of up to two antennae for diversity

The Antenna may be 2.4GHz, 4.9/6GHz or Tri-Band types as required

The antenna should be connected to TNC socket labelled Main Port. It can be connected directly or through low-loss 50 ohm co-axial cable, which might be required if the module is housed in a metal enclosure, or the position of the antenna needs to be optimised.

The Aux Port may be used for a second antennae if diversity is required.

4. GETTING STARTED

4.1. Select Working mode

The 9469-ET creates a link between your Ethernet and a WiFi Network

It can be configured to operate in one of two different modes: Access Point or Bridge, but the default mode is Access Point

4.1.1. Access Point

In Access Point mode, the 9469-ET becomes a communications hub to enable various items of WiFi equipment (set in "infrastructure" mode) to connect into a wired Ethernet network.

4.1.2. Bridge

In this mode, the 9469-ET gives wired Ethernet output equipment access to a WiFi network. (Use "infrastructure" mode to connect to an existing access point, otherwise use "adhoc" mode.)

4.2. Collect Network Parameters

In order to configure the 9469-ET, you will need to have the following pieces of information.

- **WiFi Network identifier "SSID"**

The SSID is a character string used to identify your WiFi network. To share the same WiFi network, your device and the other WiFi equipment must use the same SSID. The SSID is up to 32 characters in length. Uppercase and lowercase letters are considered different.

- **Radio Channel**

You must choose a radio channel in addition to the SSID to define the transmission frequency the device will use to communicate with other equipment. It is recommended to use less than 3 channels in the same covered area in order to avoid disturbances. It is also recommended to leave at least two unused channels between each radio channel. In Ad-hoc mode, all the equipment must have the same radio channel. Legislation is different in each country; check what channels you can use in the country where the device is installed.

- **Device IP Address**

If you don't use DHCP, you must define an IP address for the device. To assign an IP address, contact the network administrator.

- **LAN Subnet Mask**

You must configure a subnet mask for the device. Refer to the subnet mast of your local network. Consult the network administrator if in doubt.

- **Gateway Address** (if required)
- **WEP or WPA Security keys**

5. LOCALISATION ON THE NETWORK

In order to locate the device on the network, use the *locator* program supplied. This is a simple standalone application that does not require installation, just copy the file to your hard drive

Connect the device to the network and run the *locator.exe* program.

The *locator* program offers the following functions

- **Scan**

When you click this button locator looks for the device on the network.

- **Configure**

When you click this, you can configure the IP Address or enable DHCP.

- **Upgrade**

This button is not implemented within the 9469-ET

- **Web**

Clicking this launches the Administrator web page of the device is brought up.

Note. If the device is behind a gateway the locator program will not find it. Use a computer on the same local network as the device for initial setup.

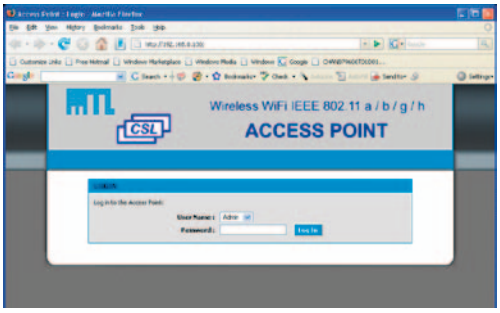
If a firewall is installed on the computer ensure that UDP port 17784 is not blocked

6. WEB CONFIGURATION

To configure the device, run the administration web page. There are two ways to do this

- Run your web browser and, if known, enter the IP address in the address field.
  (Note: the default IP address is 192.168.1.253)
- Locate the device using the *locator* program mentioned in Section 5, then click on the Web button.

Once on the Web pages a screen appears as below. Initially there is no password.



7. SWITCHING BETWEEN ACCESS POINT AND BRIDGE

To change the operating mode, enter the menu BASIC->WIRELESS and choose the firmware you want to use. Then click on Save Settings and Reboot the Device. The device will then restart and use the selected firmware.

8. DEVICE CONFIGURATION

The administration pages consist of the following five categories

- **Basic**

Configure IP addresses, 802.11 mode, radio channel, SSID, security.

- **Advanced**

Configure MAC address filtering

- **Tools**

Set User password, admin password, view firmware version, upgrade firmware

- **Status**

Device info, IP addresses, Radio Channel, Connected devices.

- **Help**

Comprehensive help on all the parameters

9. UPGRADE

In order to upgrade the device follow the steps below

- Open the administration web page
- Click on tools -> Firmware

In the firmware upgrade section browse to select the new firmware file

- Click on Upload
- If the upgrade is successful the device will restart

10 ENVIRONMENTAL

Operating Temperature	–20°C…+60°C
Storage Temperature	–20°C…+60°C
Humidity	5…95% RH, non condensing

11 WASTE REMOVAL INFORMATION

The electronic equipment within must not be treated as general waste. By ensuring that this product is disposed of correctly you will be helping to prevent potentially negative consequences for the environment and human health, which could otherwise be caused by incorrect waste handling of this product.

For more detailed information about the take-back and recycling contact **MTL**.

12 TECHNICAL

Ethernet LAN
RJ45 10/100 Base TX Interface

WiFi
IEEE 802.11a/b/g/h 2.4 / 5 / 5.4 GHz standards, multi-country Roaming support (IEEE 802.11d). Dynamic Frequency Selection (DFS) support provides flexible selection of best frequency to allow mobility among all existing IEEE 802.11a/b/g/h networks; "ClearVoice" band provides non-overlapping channels for fast-speed data transmission; Transmission Power Control (TPC) offers flexibility to adjust RF output power.

Data Rate
Up to 108Mbps (Super AG mode)

Channels
13 channels (b/g modes), 8 channels (a mode), 11 channels (h mode)

Output Power
Transmitter +20dBm (TPC)

Sensitivity
Receiver –92dBm for IEEE 802.11a/g and –95dBm for IEEE 802.11b

Modulation
OFDM: BPSK, QPSK, 16QAM, 64QAM DSSS: DBPSK, DQPSK, CCK

Security
64/128 bits WEP, WPA-PSK, WPA2-PSK, IEEE 802.11x (RADIUS) authentication, MAC address filtering, SSID broadcast control.

Modes
Access Point (AP) for WiFi Network Infrastructure, Bridge mode to connect any 10/100 wired Ethernet equipment to a wireless network, Repeater (WDS) mode to extend wireless coverage, Infrastructure & AD-HOC modes are supported.

Administration
Built-in Web interface. Setup of the device using a web browser.

13 ACCESSORIES

For interconnecting the 9460-ET range of products, we offer approved RJ45 Cat5e UTP cables in various standard lengths (0.5…100m)

The ANT94 omnidirectional antenna is ideal for use where good general coverage is required.

Ordering details

Copper Twisted Pair UTP Patch Cable (Blue) pre-terminated RJ45-RJ45 connectors
Part No. CSL9405-xx (-xx is used to signify the length of the cable.)

Part No. ANT94 Omnidirectional antenna

14 APPROVALS

The operating parameters must not exceed those as detailed on the certificate.

- 2004/108/EC EMC Directive
- 2006/95/EC Low Voltage Directive

Region	Europe (ATEX)	International IECEx	USA	Canada
Authority	SIRA	SIRA	FM	FMC
Standard	EN 60079-0:2006, EN 60079-11:2007, IEC 60079-26:2006, EN 60079-28:2007, EN 50303:2000, IEC 61241-0:2004, IEC 61241-11:2005	IEC 60079-0:2004, IEC 60079-11:2006, IEC 61241-0:2004, IEC 61241-1:2004	3600 3610 3810	C22.2 No. 61010.1:2004 C22.2 No. 157:1992 CAN/CSA-E60079-0:2007 CAN/CSA-E60079-11:2002
Approved for	⟨Ex⟩ II 1GD Ga Ex ia IIC T4 Ex iaD 20 T135°C (Ta = –40°C to +60°C)* ⟨Ex⟩ I M1 Ma Ex ia I (Ta = –40°C to +60°C)*	Ga Ex ia IIC T4 Ex iaD 20 T135°C Ma Ex ia I (Ta = –40°C to +60°C)*	IS/I/1/ABCD/T4 Ta=60°C I/0/AEx ia IIC T4 Ta=60°C	IS/I/1/ABCD/T4 Ta=60°C I/0/AEx ia IIC T4 Ta=60°C
Cert. no.	Sira 07ATEX2064X	IECEx SIR 07.0042X	3034995	3034995C

* (see specification for operating temperature range)

15 FM CERTIFICATION INFORMATION

Special Condition of Use - Factory Mutual (USA & Canada)

1. The Model 9469-ET shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application.
2. The Model 9469-ET shall be excluded from use in environments containing chemical vapours of the Ketone or Ester families.

16 ATEX & IECEx CERTIFICATION INFORMATION

The following information is in accordance with the Essential Health and Safety Requirements (Annex II) of the EU Directive 94/9/EC [the ATEX Directive - safety of apparatus] and is provided for those locations where the ATEX Directive is applicable.

General

a. This equipment must only be installed, operated and maintained by competent personnel. Such personnel shall have undergone training, which included instruction on the various types of protection and installation practices, the relevant rules and regulations, and on the general principles of area classification. Appropriate refresher training shall be given on a regular basis. [See clause 4.2 of EN 60079-17].

b. This equipment has been designed to provide protection against all the relevant additional hazards referred to in Annex II of the directive, such as those in clause 1.2.7.

c. This equipment has been designed to meet the requirements of intrinsically safe electrical apparatus in accordance with EN 60079-0, EN 60079-11 and EN 60079-26.

Installation

a. reference to the IEC code of practice IEC 60079-14. In addition, particular industries or end users may have specific requirements relating to the safety of their installations and these requirements should also be met. For the majority of installations the Directive 1999/92/EC [the ATEX Directive - safety of installations] is also applicable.

b. Unless already protected by design, this equipment must be protected by a suitable enclosure against:
   i) mechanical and thermal stresses in excess of those noted in the certification documentation and the product specification.
   ii) aggressive substances, excessive dust, moisture and other contaminants.

c. This equipment is intrinsically safe electrical apparatus and is normally mounted in a hazardous area. When mounted in a Zone1 location the apparatus must be provided with an enclosure, which offers an additional degree of protection appropriate to the area classification.

Read also the Special Conditions for Safe Use for any additional or more specific information.

Special Conditions for Safe Use

1. When used with Group I gases, the Modules shall each be mounted within an enclosure providing a degree of protection of at least IP54, in accordance with EN 60529, and in a manner that does not impair the existing creepage and clearance distances. The enclosure shall also comply with the requirements of Clauses 7 and 8 of EN 60079-0:2006.
2. The connectors do not meet the ingress protection rating of IP20, therefore, this shall be taken into consideration during the installation of the 9400 Series Ethernet Modules when used with Group II gases, and each module shall be provided with an enclosure that is commensurate with the environment into which it is installed.
3. The supply to the modules must be derived from a suitably certified, intrinsically safe supply.

Inspection and maintenance

a. Inspection and maintenance should be carried out in accordance with European, national and local regulations which may refer to the IEC standard IEC 60079-17. In addition specific industries or end users may have specific requirements which should also be met.

b. Access to the internal circuitry must not be made during operation.

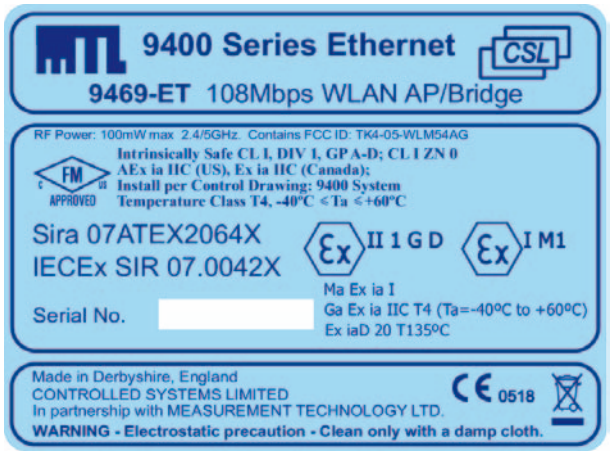
Repair

This product cannot be repaired by the user and must be replaced with an equivalent certified product.

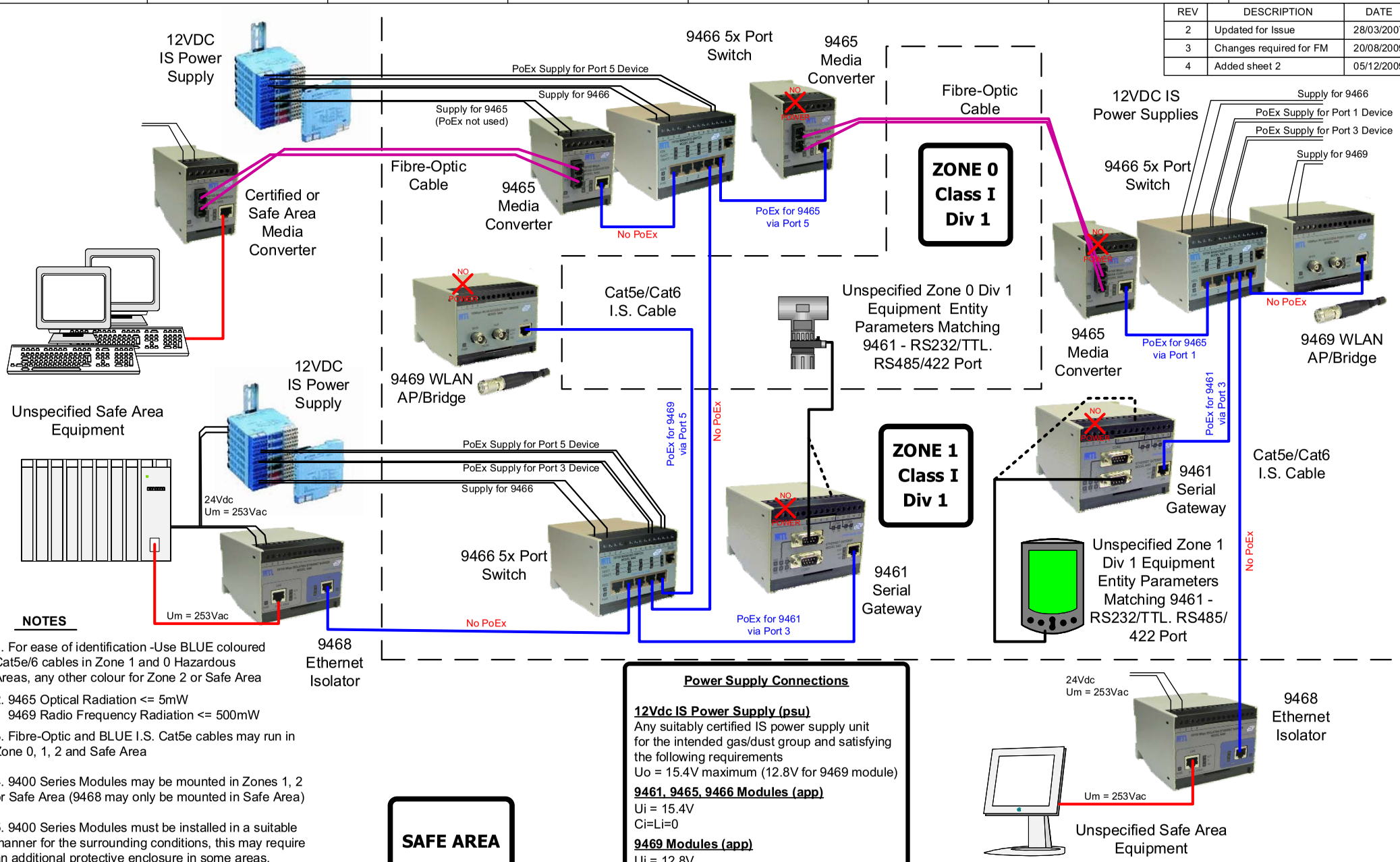
Marking

Each device is marked in accordance with the Directive and CE marked with the Notified Body Identification Number.

This information applies to products manufactured during or after the year 2010.


9400 Series Ethernet
CSL
9469-ET 108Mbps WLAN AP/Bridge
RF Power: 100mW max 2.4/5GHz. Contains FCC ID: TK4-05-WLM54AG
FM APPROVED
Intrinsically Safe CL I, DIV I, GP A-D; CL I ZN 0
AEx ia IIC (US), Ex ia IIC (Canada);
Install per Control Drawing: 9400 System
Temperature Class T4, -40°C ≤ Ta ≤ +60°C
Sira 07ATEX2064X
IECEx SIR 07.0042X
Ex II 1 G D
Ex I M1
Ma Ex ia I
Ga Ex ia IIC T4 (Ta=-40°C to +60°C)
Ex iaD 20 T135°C
Serial No.
Made in Derbyshire, England
CONTROLLED SYSTEMS LIMITED
In partnership with MEASUREMENT TECHNOLOGY LTD.
CE 0518
WARNING - Electrostatic precaution - Clean only with a damp cloth.

REV	DESCRIPTION	DATE
2	Updated for Issue	28/03/2007
3	Changes required for FM	20/08/2009
4	Added sheet 2	05/12/2009



NOTES

1. For ease of identification -Use BLUE coloured Cat5e/6 cables in Zone 1 and 0 Hazardous Areas, any other colour for Zone 2 or Safe Area
2. 9465 Optical Radiation <= 5mW
   9469 Radio Frequency Radiation <= 500mW
3. Fibre-Optic and BLUE I.S. Cat5e cables may run in Zone 0, 1, 2 and Safe Area
4. 9400 Series Modules may be mounted in Zones 1, 2 or Safe Area (9468 may only be mounted in Safe Area)
5. 9400 Series Modules must be installed in a suitable manner for the surrounding conditions, this may require an additional protective enclosure in some areas.
6. PoEx (Power over Ethernet for Hazardous Areas) A means of distributing IS power supplies to devices via the Cat5 Ethernet cable as an alternative to a separate power cable. Ensure only one power source is used (PoEx or separate power cable)
7. Refer to User Manual for Connections and Installation Instructions. See Certificate for Safety Description

Power Supply Connections

12Vdc IS Power Supply (psu)
Any suitably certified IS power supply unit for the intended gas/dust group and satisfying the following requirements
Uo = 15.4V maximum (12.8V for 9469 module)

9461, 9465, 9466 Modules (app)
Ui = 15.4V
Ci=Li=0

9469 Modules (app)
Ui = 12.8V
Ci=Li=0

9468 Modules 24Vdc Supply Input
Um = 253Vac

Supply Cable
Cc (cable) <= Co (psu) - Ci (app)
Lc (cable) <= Lo (psu) - Li (app)
L/R(cable) <= Lo/Ro (psu)

CSL

CONTROLLED SYSTEMS LTD.
SWADLINCOTE, DERBYSHIRE. ENGLAND

TITLE: 9400 Series Ethernet System Drawing of Typical Installation

DRAWN : IAC
DATE: 05/12/2009
SIZE: A3
DWG NO: 9400 System
REV: 4
SCALE:
SHEET: 1 OF 2

The **9461-ET Ethernet Gateway Module**

Description	Location	Input Parameters			Output Parameters				
		Ui (V)	Ci (µF)	Li (mH)	Uo (V)	Io (mA)	Po (mW)	Co (µF)	Lo (mH)
Optional Input Power Supply	T1, T2 w.r.t. T3, T4	15.4	0	0	-	-	-	-	-
RS485/422 Port 3	T6 w.r.t. T10	7.2	0	0	5.88	111	163	20	3.00
	T7 w.r.t. T10								
	T8 w.r.t. T10								
	T9 w.r.t. T10								
RS485/422 Port 4	T11 w.r.t. T15	7.2	0	0	5.88	111	163	20	3.00
	T12 w.r.t. T15								
	T13 w.r.t. T15								
	T14 w.r.t. T15								
TTL/RS232 Port 1; CON 1	Pin 9 w.r.t. Pin 5	0	0	0	5.88	188	276	20	2.26
	Pin 3 w.r.t. Pin 5	5.88	0	0	5.88	16	24	20	138
	Pin 4 w.r.t. Pin 5								
	Pin 7 w.r.t. Pin 5								
	Pin 2 w.r.t. Pin 5	12.5	0	0	3.15	3.4	2.7	50	1000
	Pin 1 w.r.t. Pin 5								
TTL/RS232 Port 2; CON 2	Pin 9 w.r.t. Pin 5	0	0	0	5.88	188	276	20	2.26
	Pin 3 w.r.t. Pin 5	5.88	0	0	5.88	16	24	20	138
	Pin 4 w.r.t. Pin 5								
	Pin 7 w.r.t. Pin 5								
	Pin 2 w.r.t. Pin 5	12.5	0	0	3.15	3.4	2.7	50	1000
	Pin 1 w.r.t. Pin 5								
RJ45 Connector (10/100 Base T) Without PoEx		15.4	0.075	0	Refer to parameters of IS power supply connected to T1, T2 w.r.t. T3, T4 for the output parameters.				
RJ45 Connector (10/100 Base T) With PoEx		15.4	0.075	0	Refer to parameters of IS power supply connected to the 9466 or 9468 Module for the output parameters.				

The **9465-ET 10/100 Media Converter**

Description	Location	Input Parameters			Output Parameters				
		Ui (V)	Ci (µF)	Li (mH)	Uo (V)	Io (mA)	Po (mW)	Co (nF)	Lo (mH)
Optional Supply Input	T1, T2 w.r.t. T3, T4	15.4	0	0	-	-	-	-	-
Fibre-Optic transmitter		-	-	-	-	-	5 max	-	-
RJ45 Connector (10/100 Base T) Without PoEx		15.4	0.075	0	Refer to parameters of IS power supply connected to T1, T2 w.r.t. T3, T4 for the output parameters.				
RJ45 Connector (10/100 Base T) With PoEx		15.4	0.075	0	Refer to parameters of IS power supply connected to the 9466 or 9468 Module for the output parameters.				

The **9466-ET 10/100 5-Port Switch**

Desc.	Loc.	Input Parameters			Output Parameters				
		Ui (V)	Ci (µF)	Li (mH)	Uo (V)	Io (mA)	Po (mW)	Co (µF)	Lo (mH)
Optional Supply Input	T1, T2 w.r.t. T3, T4	15.4	0	0	-	-	-	-	-
PoEx Supply Terminals*	T6 w.r.t. T7	15.4	0.075	0	-	-	-	-	-
	T8 w.r.t. T9								
	T10 w.r.t. T11								
	T12 w.r.t. T13								
	T14 w.r.t. T15								
Mini-DIN 8-way CON1 Management Port	Pin 5 w.r.t. Pins 4 & 8	12.5	0	0	3.15	3.4	2.7	50	1000
	Pins 1, 3 & 4 w.r.t. Pins 5 & 6	0	0	0	5.88	48	72	20	15
RJ45 ConnA 10/100 Base T		15.4	0.075	0	Refer to parameters of IS power supply connected to T6 w.r.t. T7 for the output parameters.				
RJ45 ConnB 10/100 Base T		15.4	0.075	0	Refer to parameters of IS power supply connected to T8 w.r.t. T9 for the output parameters				
RJ45 ConnC 10/100 Base T		15.4	0.075	0	Refer to parameters of IS power supply connected to T10 w.r.t. T11 for the output parameters				
RJ45 ConnD 10/100 Base T		15.4	0.075	0	Refer to parameters of IS power supply connected to T12 w.r.t. T13 for the output parameters				
RJ45 ConnE 10/100 Base T		15.4	0.075	0	Refer to parameters of IS power supply connected to T14 w.r.t. T15 for the output parameters				

* Not to be used if PoEx is supplied at the 9468-ET Module.

The **9468-ET Ethernet Isolator Module**

Description	Location	Um (Vac)	Ci (µF)	Li (mH)
Safe area supply input	T1, T2 w.r.t. T3, T4	253	0	0
RJ45 from safe area 10/100 Base T		253	-	-

The 9468-ET may be connected to a single IS power supply at T14 and T15 if power-over-Ethernet (PoEx) is required through pins 4, 5, 7 & 8 of the RJ45 connectors unless PoEx is supplied at the 9466-ET Module.

Description	Location	Input Parameters			Output Parameters				
		Ui (V)	Ci (µF)	Li (mH)	Uo (V)	Io (mA)	Po (mW)	Co (µF)	Lo (mH)
IS Power Supply (optional PoEx)*	T14 w.r.t. T15	15.4	0.075	0	-	-	-	-	-
RJ45 to/from hazardous area 10/100 Base T**		15.4	0.075	0	Refer to parameters of IS power supply connected to T14 w.r.t. T15 for the output parameters				

* Power supply may only be connected if PoEx is not already connected at the 9466 Module.
** RJ45 Ethernet Port is intended for connection only to other RJ45 connectors on other 9400 Series Ethernet modules, each powered from a single intrinsically safe supply.
Connection to other Ethernet systems requires special consideration and is outside the scope of this certificate, see installation drawing for connection details.

The **9469-ET WLAN AP/Bridge**

Description	Location	Input Parameters			Output Parameters				
		Ui (V)	Ci (µF)	Li (mH)	Uo (V)	Io (mA)	Po (mW)	Co (µF)	Lo (µH)
Optional Supply Input	Terminal T1, T2 w.r.t. T3, T4	12.8	0	0	-	-	-	-	-
RJ45 Connector (10/100 Base T) without PoEx		12.8	0.075	0	Refer to parameters of IS power supply connected to T1, T2 w.r.t. T3, T4 for the output parameters.				
RJ45 Connector (10/100 Base T) With PoEx		12.8	0.075	0	Refer to parameters of IS power supply connected to the 9466 or 9468 Module for the output parameters.				
Antenna A		-	-	-	-	-	500 max RF	-	-
Antenna B		-	-	-	-	-	500 max RF	-	-

NOTE: RJ45 ETHERNET PORTS* ARE INTENDED FOR CONNECTION ONLY TO OTHER 9400 SERIES MODULES SHOWN ON THIS DRAWING.

*(With the exception of 9468-ET Safe Area port)

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CONTROLLED SYSTEMS LTD.
SWADLINCOTE, DERBYSHIRE. ENGLAND

TITLE: 9400 Series Ethernet System Drawing of Typical Installation

DRAWN : IAC

DATE: 05/12/2009

SIZE: A3

DWG NO: 9400 System

REV: 4

SCALE:

SHEET: 2 OF 2

MTL Instruments Pty Limited
9 /12 Billabong Street
Stafford
Queensland 4053
Australia
Tel: + 61 1300 308 374 Fax: + 61 1300 308 463
E-mail: enquiries@mtlaus.com.au

Cooper Electric (Shanghai) Co.Ltd.
Room 2001, China Life Tower
16 Chao Yang Men Wai Street
Chao Yang District, Beijing
China 100020
Tel: + 86 10 5980 0288 Fax: + 86 10 8562 5725
E-mail: bjsales@mtl-inst.cn

MTL Instruments sarl
Les Carrés du Parc
10 rue des Rosiéristes
69410 Champagne au Mont d'Or
France
Tel: +33 (0)4 78 64 98 32 Fax: +33 (0)4 78 35 79 41
E-mail: info@mtl-inst.fr

MTL Instruments GmbH
An der Gümpgesbrücke 17
D-41564 Kaarst
Germany
Tel: +49 (0)2131 718930 Fax: +49 (0)2131 7189333
E-mail: info@mtl.de

MTL India
No. 36, Nehru Street
Off Old Mahabalipuram Road
Sholinganallur
Chennai - 600 119
India
Tel: + 91 (0)44 24501660/24501857 Fax: + 91 (0)44 24501463
E-mail: sales@mtlindia.com

MTL Italia srl
Via Cantù 11
I - 20092 Cinisello Balsamo MI
Italy
Tel: +39 (0)2 61802011 Fax: +39 (0)2 61294560
E-mail: info@mtl-inst.it

MTL Instruments KK
MT Building 3F
2-7-5 Shiba Daimon
Minato-ku Tokyo
Japan 105-0012
Tel: +81 (0)3 6430 3128 Fax: +81 (0)3 6430 3129
E-mail: sales@mtlkk.co.jp

Cooper Crouse-Hinds Korea
12F, Vision Tower
707-2 Yeoksam-dong, Gangnam-gu
Seoul 135-080
South Korea
Tel: +82 2 3484 6795 Fax: +82 2 3484 6778

MTL Instruments BV
MTL Instruments BV
Terheijdenseweg 465
4825BK Breda
The Netherlands
Tel: +31(0)76 7505360 Fax: +31(0)76 7505370
E-mail: info@mtlbenelux.com

Cooper Crouse-Hinds Pte Ltd
No.2 Serangoon North Avenue 5
#06-01 Fu Yu Building
Singapore 554911
Tel: +65 6 487 7887 Fax: +65 6 487 7997
E-mail: sales@mtlsing.com.sg

MTL Instruments
Villa No. 4, Sector 2-17, Street 6
PO Box 53234,
Abu Dhabi, UAE
Tel: +971 2 446 6840 Fax: +971 2 446 6841
E-mail: mtlgulf@mtl-inst.com

Measurement Technology Limited
Great Marlings, Butterfield, Luton, Beds
England LU2 8DL
Tel: +44 (0)1582 723633 Fax: +44 (0)1582 422283
E-mail: enquiry@mtl-inst.com

MTL Incorporated
3413 N. Sam Houston Parkway W.
Suite 210
Houston TX 77086
USA
Tel: +1 281 571 8065 Fax: +1 281 571 8069
E-mail: csinfo@mtl-inst.com

Group Internet home page http://www.mtl-inst.com/

Members of The MTL Instruments Group