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

12VDC IS Power Supply

9466 5x Port Switch

9465 Media Converter

PoEx Supply for Port 5 Device

Supply for 9466

Supply for 9465 (PoEx not used)

Fibre-Optic Cable

Certified or Safe Area Media Converter

Fibre-Optic Cable

9465 Media Converter

No PoEx

PoEx for 9465 via Port 5

ZONE 0 Class I Div 1

12VDC IS Power Supplies

Supply for 9466

PoEx Supply for Port 1 Device

PoEx Supply for Port 3 Device

Supply for 9469

9466 5x Port Switch

9465 Media Converter

No PoEx

9469 WLAN AP/Bridge

Unspecified Safe Area Equipment

12VDC IS Power Supply

9469 WLAN AP/Bridge

NO POWER

Cat5e/Cat6 I.S. Cable

Unspecified Zone 0 Div 1 Equipment Entity Parameters Matching 9461 - RS232/TTL. RS485/422 Port

PoEx for 9469 via Port 5

No PoEx

PoEx for 9465 via Port 1

PoEx for 9461 via Port 3

Cat5e/Cat6 I.S. Cable

No PoEx

ZONE 1 Class I Div 1

9461 Serial Gateway

24Vdc Um = 253Vac

PoEx Supply for Port 5 Device

PoEx Supply for Port 3 Device

Supply for 9466

9466 5x Port Switch

9461 Serial Gateway

Unspecified Zone 1 Div 1 Equipment Entity Parameters Matching 9461 - RS232/TTL. RS485/422 Port

PoEx for 9461 via Port 3

9461 Serial Gateway

No PoEx

24Vdc Um = 253Vac

9468 Ethernet Isolator

Um = 253Vac

9468 Ethernet Isolator

Um = 253Vac

Unspecified Safe Area Equipment

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

SAFE AREA

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
U_o = 15.4V maximum (12.8V for 9469 module)

9461, 9465, 9466 Modules (app)
U_i = 15.4V
$C_i = L_i = 0$

9469 Modules (app)
U_i = 12.8V
$C_i = L_i = 0$

9468 Modules 24Vdc Supply Input
U_m = 253Vac

Supply Cable
C_c (cable) <= C_o (psu) - C_i (app)
L_c (cable) <= L_o (psu) - L_i (app)
L/R (cable) <= L_o/R_o (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 / T7 w.r.t. T10 / T8 w.r.t. T10 / T9 w.r.t. T10	7.2	0	0	5.88	111	163	20	3.00
RS485/422 Port 4	T11 w.r.t. T15 / T12 w.r.t. T15 / T13 w.r.t. T15 / T14 w.r.t. T15	7.2	0	0	5.88	111	163	20	3.00
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 / Pin 4 w.r.t Pin 5 / Pin 7 w.r.t Pin 5	5.88	0	0	5.88	16	24	20	138
	Pin 2 w.r.t Pin 5 / Pin 1 w.r.t Pin 5	12.5	0	0	3.15	3.4	2.7	50	1000
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 / Pin 4 w.r.t Pin 5 / Pin 7 w.r.t Pin 5	5.88	0	0	5.88	16	24	20	138
	Pin 2 w.r.t Pin 5 / Pin 1 w.r.t Pin 5	12.5	0	0	3.15	3.4	2.7	50	1000
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 / T8 w.r.t. T9 / T10 w.r.t. T11 / T12 w.r.t. T13 / T14 w.r.t. T15	15.4	0.075	0	-	-	-	-	-
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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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