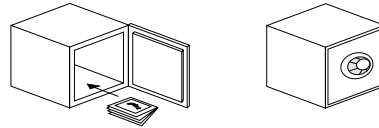


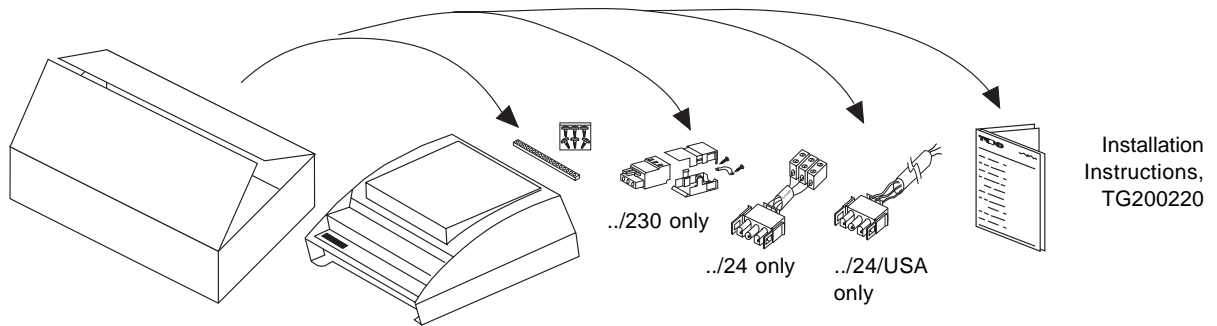
Important: Retain these instructions



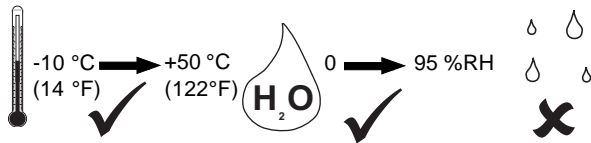
CONTENTS

1	Unpacking	1	3	Installation	1
2	Storage	1	3.1	Installation - Mounting	1
			3.2	Installation - Configuration	5
			4	Disposal	11

1 Unpacking



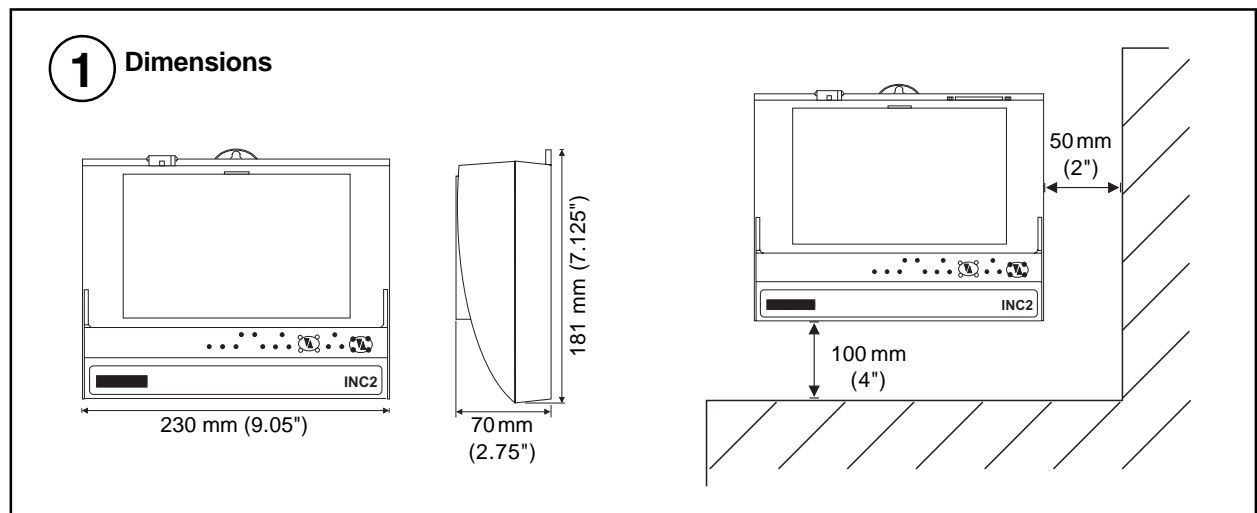
2 Storing



It is recommended that the installation should comply with the HSE Memorandum of Guidance on Electricity at Work Regulations 1989. For USA install equipment in accordance with the National Electric Code.

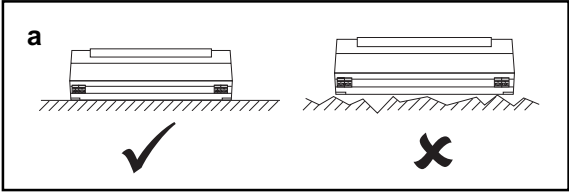
3 Installation

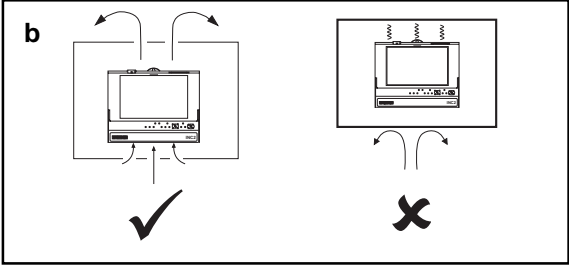
3.1 Installation - Mounting

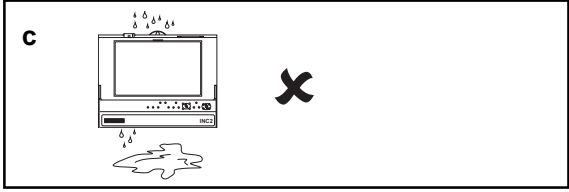


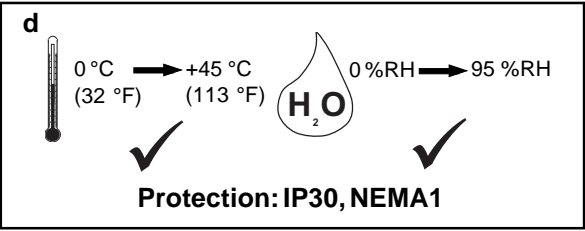
3.1 Installation - Mounting (Continued)

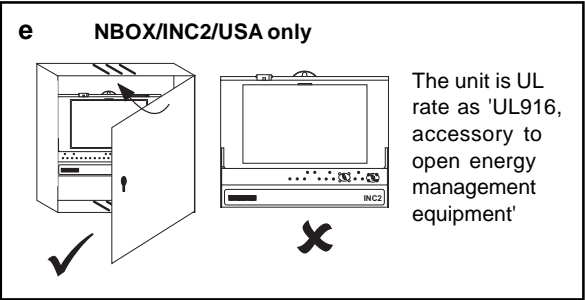
2 Requirements

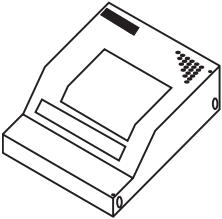
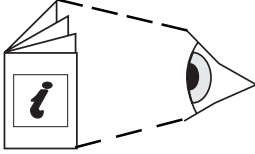
a 

b 

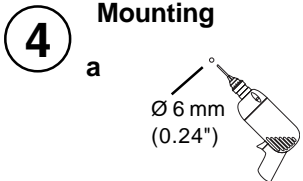
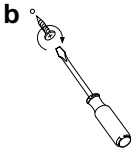
c 

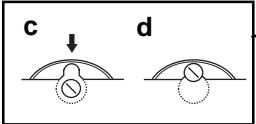
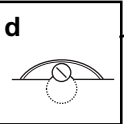
d  **Protection: IP30, NEMA1**

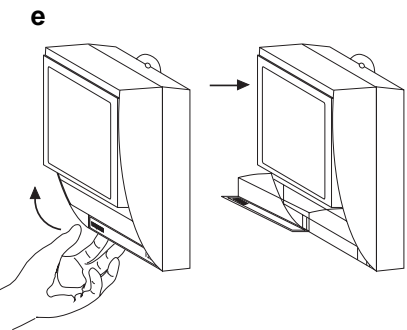
e NBOX/INC2/USA only  The unit is UL rate as 'UL916, accessory to open energy management equipment'

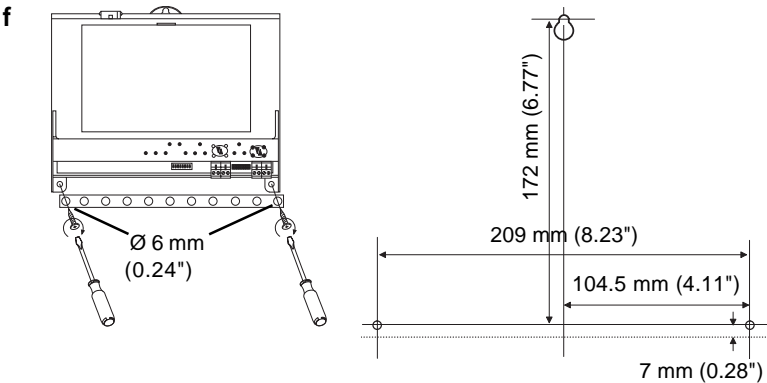
3 Mount MBOX  if using ENCLS/MBOX/IQ22x  ENCLS/MBOX/IQ22x Installation Instructions TG200203

4 Mounting

a  Ø 6 mm (0.24") **b** 

c  **d** 

e 

f 

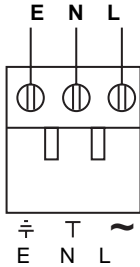
3.1 Installation - Mounting (Continued)

5 Connecting Power

NBOX(B)/INC2/230 consumption ≤ 7.5 VA

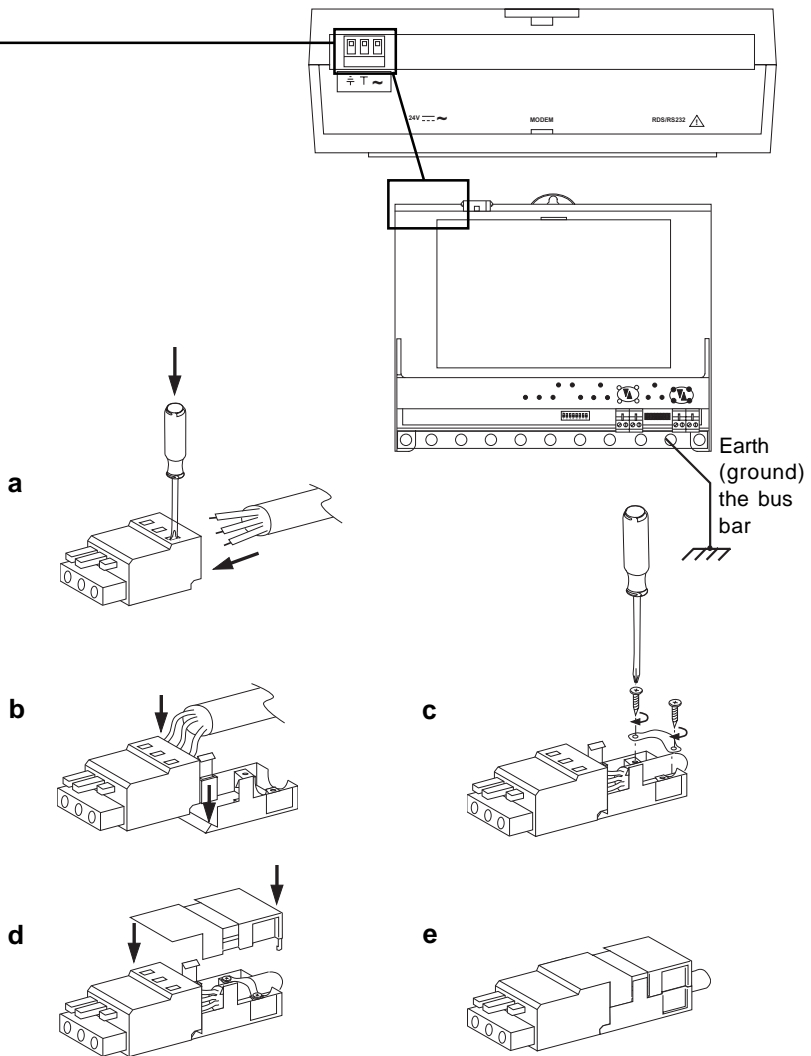
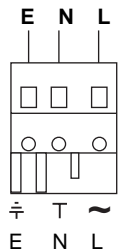
/230 230 Vac

either screw terminal

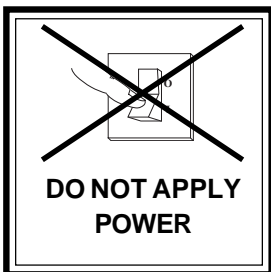


Terminal size 0.5 to 2.5 mm²
(14 to 20 AWG)

or shrouded plug kit



Earth (ground) the bus bar



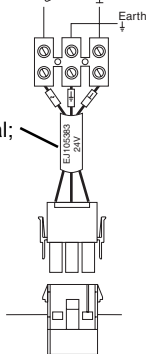
WARNING: This apparatus must be earthed (grounded).
(using input power earth (ground) terminal)

NBOX/INC2/24 consumption ≤ 7.5 VA

24 V versions

24 Vdc: +24V 0V
24 Vac: 24 Vac 0V

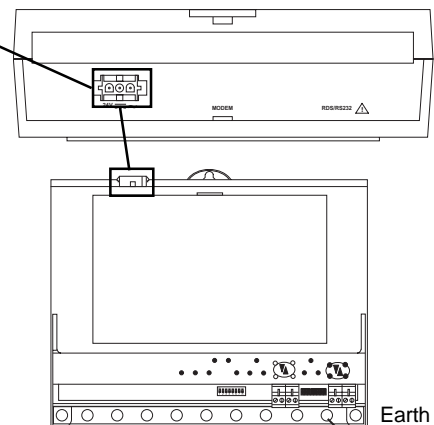
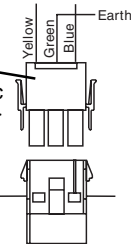
Mat-N-Loc to terminal;
adaptor (supplied)



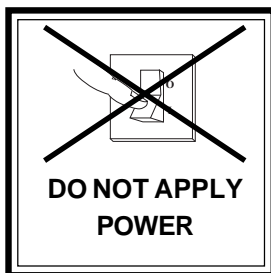
/USA only

24 Vdc: +24V 0V
24 Vac: 24 Vac 0V

2 part
Mat-N-Loc
connector
(supplied)



Earth (ground) the bus bar



WARNING: This apparatus must be earthed (grounded).
(using input power earth (ground) terminal)

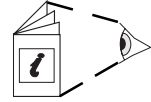
3.2 Installation - Mounting (continued)

6 Connect Network (Lan A) (unless RS232 receiver/transmitter Device A being used e.g. leased line modem)

Normally **Local Lan** dumb/normal switch set to dumb, any address dumb/normal switch set to normal, address <100

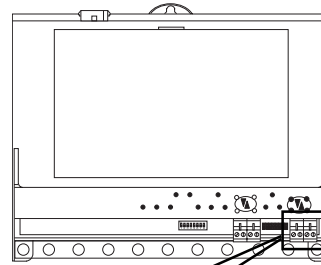
Note that EINC's, INC's LINC's cannot be on same local Lan

Internetwork segment A if dumb/normal switch set to normal (internetwork buffer), address >=100

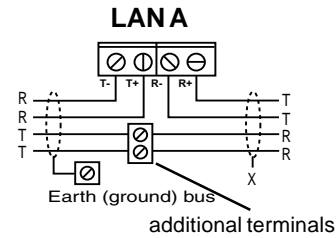
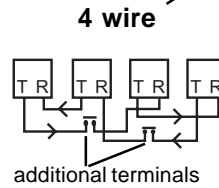
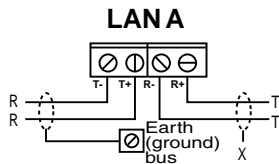
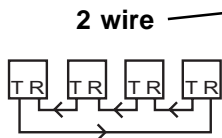


Network Engineering Manual, 92-1735

Cable	1k2 baud	4k8 baud	9k6 baud	19k2 baud	No. of Wires
Belden 9182	1000 m (1090 yds)	1000 m (1090 yds)	1000 m (1090 yds)	700 m (765 yds)	2
Belden 9207	1000 m (1090 yds)	1000 m (1090 yds)	1000 m (1090 yds)	500 m (545 yds)	2
IQ sytem TP/1/1/22/HF/200 (Belden 8761)	1000 m (1090 yds)	1000 m (1090 yds)	700 m (765 yds)	350 m (380 yds)	2
IQ system TP/2/2/22/HF/200 (Belden 8723)	1000 m (1090 yds)	1000 m (1090 yds)	500 m (545 yds)	250 m (270 yds)	4

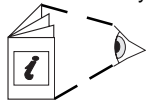


Polarity independent
Terminal size 0.5 to 2.55 m² (14 to 20 AWG)



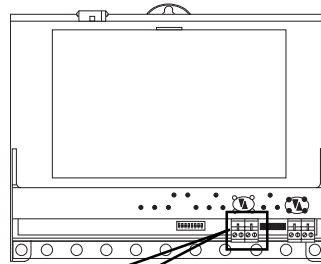
7 Connect Network (Lan B) (unless RS232 receiver/transmitter Device B being used e.g. leased line modem)

Always **Internetwork**

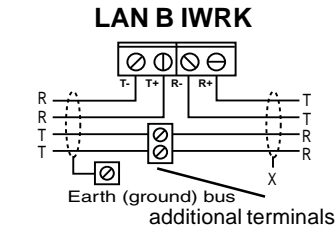
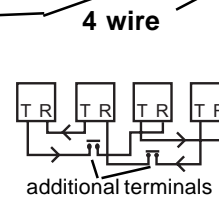
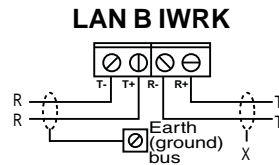
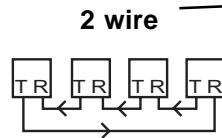


Network Engineering Manual, 92-1735

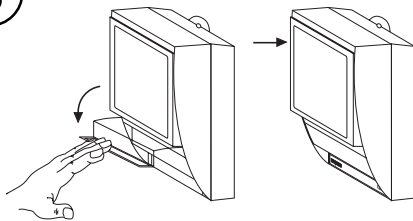
Cable	1k2 baud	4k8 baud	9k6 baud	19k2 baud	38k4 baud	No. of Wires
Belden 9182	1000 m (1090 yds)	1000 m (1090 yds)	1000 m (1090 yds)	700 m (765 yds)	500 m (545 yds)	2
Belden 9207	1000 m (1090 yds)	1000 m (1090 yds)	1000 m (1090 yds)	500 m (545 yds)	350 m (380 yds)	2
IQ system TP/1/1/22/HF/200 (Belden 8761)	1000 m (1090 yds)	1000 m (1090 yds)	700 m (765 yds)	350 m (380 yds)	250 m (270 yds)	2
IQ system TP/2/2/22/HF/200 (Belden 8723)	1000 m (1090 yds)	1000 m (1090 yds)	500 m (545 yds)	250 m (270 yds)	125 m (135 yds)	4



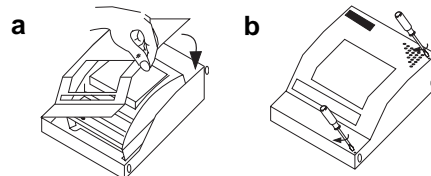
Polarity independent
Terminal size 0.5 to 2.55 m² (14 to 20 AWG)



8 Close Flap

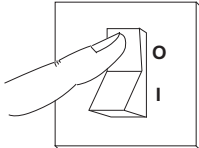


9 Close MBOX if fitted in ENCLS/MBOX/IQ22x



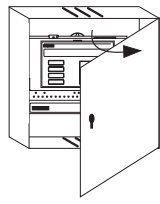
3.2 Installation Configuration

1 Switch off



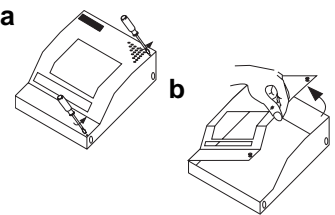
2 Open Panel

NBOX/INC2/USA only
The unit is UL rated as 'UL916, accessory to open energy management equipment'

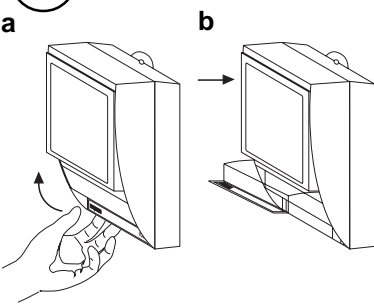


WARNING:
Opening the panel may expose dangerous voltages. 417-IEC-5036

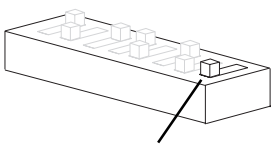
3 Open MBOX
if unit fitted in ENCLS/MBOX/IQ22x



4 Open Flap



5 Set Dumb/Normal switch

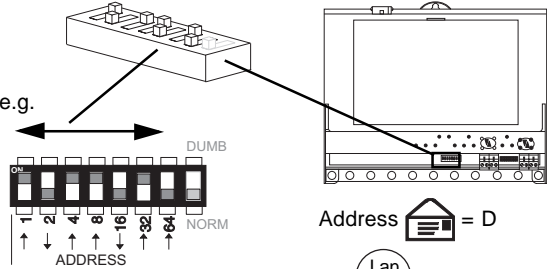


e.g. ADDRESS: 1, 2, 4, 8, 16, 32, 64, NORM

Dumb
Sets INC mode only: (Lan/Internetwork gateway, Lan A always a Lan, never Internetwork)

Norm
Sets Internetwork extension or INC mode dependent on address (see step 6 below)

6 Set the INC2 Internetwork Address
(Lan number)



e.g. ADDRESS = 2 + 16 = 18

Address = D

SET (switch down) ✓ address 1, 4 to 9, 11 to 114

NOT SET (switch up) ✗ address 0, 2, 3, 10 or >119

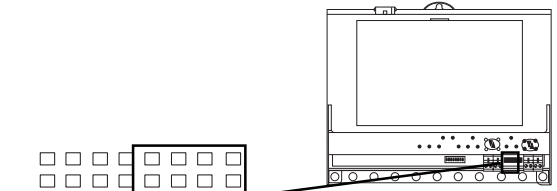
if **dumb** (traditional INC mode only) address defines Lan number on Internetwork (Lan/Internetwork gateway)

if **normal** if address < 100, address defines Lan number on Internetwork (Lan/Internetwork gateway)

if address = > 100, address is for configuration only (Internetwork extension mode)

7 Set Lan A Network Baud Rate (or Device A RS232 baud rate if connected to RS232 receiver/transmitter)

Baud A




move link to set baud rate

Network Baud Rate = R1 (or RS232 to Device A)

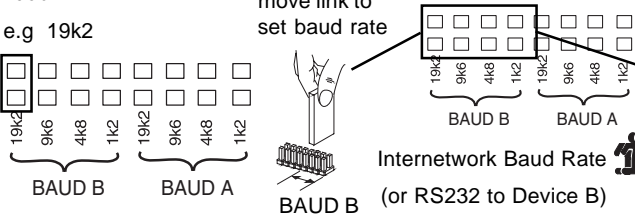
e.g. 9k6

3.2 Installation - Configuration (Continued)


8 Set Lan B Internetwork Baud Rate 

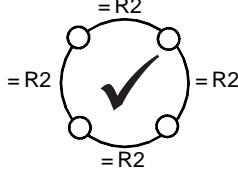
(or Device B RS232 baud rate if connected to RS232 receiver/transmitter)

Baud B
e.g. 19k2



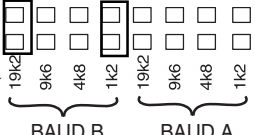
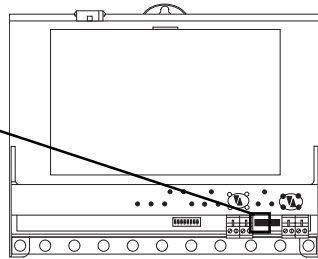
move link to set baud rate

Internetnetwork Baud Rate  = R2
(or RS232 to Device B)



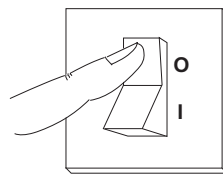
or High Baud Rate, 38k4

Note: needs extra link

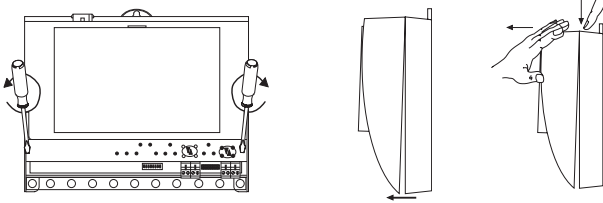




9 Remove Cover
if Connecting to RS232 Receiver/Transmitter

a Switch off



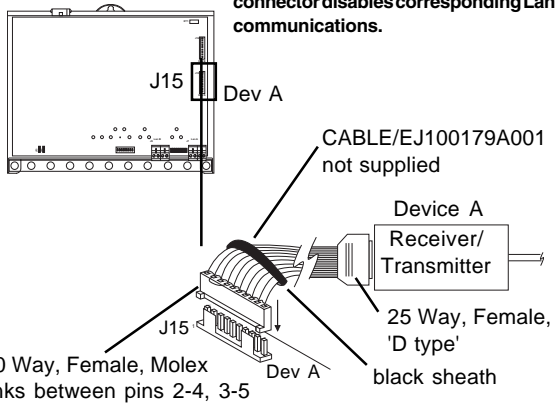
b Remove Cover



Caution:  This unit contains static sensitive devices. Suitable anti-static precautions should be taken throughout this operation to prevent damage to the unit.
BS EN100015/1 Basic Specification: protection of electrostatic sensitive devices.

10 Connect to RS232 Device A
if Device A is a RS232 receiver/transmitter
(e.g. leased line modem)

Note: Connecting a cable to an RS232 connector disables corresponding Lan communications.



J15 Dev A

CABLE/EJ100179A001 not supplied

Device A Receiver/Transmitter

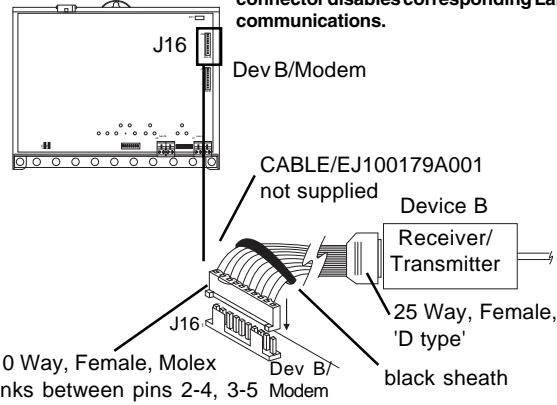
25 Way, Female, 'D type' black sheath

J15 Dev A

10 Way, Female, Molex links between pins 2-4, 3-5

11 Connect to RS232 Device B
if Device B is a RS232 receiver/transmitter
(e.g. leased line modem)

Note: Connecting a cable to an RS232 connector disables corresponding Lan communications.



J16 Dev B/Modem

CABLE/EJ100179A001 not supplied

Device B Receiver/Transmitter

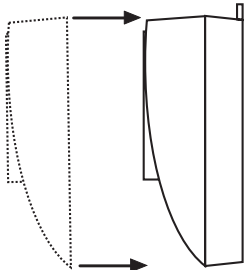
25 Way, Female, 'D type' black sheath

J16 Dev B/Modem

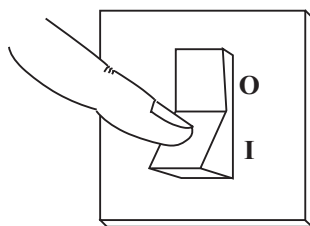
10 Way, Female, Molex links between pins 2-4, 3-5

3.2 Installation - Configuration (Continued)

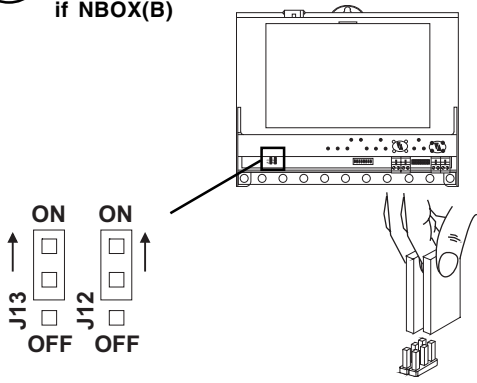
12 Replace Cover
if RS232 receiver/transmitter connected



13 Switch On



14 Set Battery Links On
if NBOX(B)

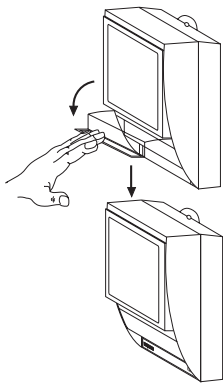


ON ON
OFF OFF

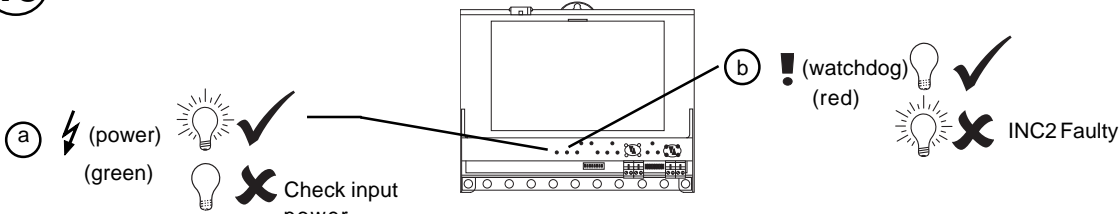
J13 J12

LEAVE POWERED FOR 16 HOURS

15 Close Flap




16 Check Node Controller



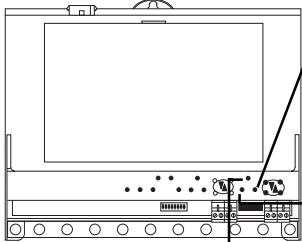
a ⚡ (power) (green) ✓
✗ Check input power





b ! (watchdog) (red) ✓
✗ INC2 Faulty



3.2 Installation - Configuration (Continued)



17 Check Lan A 




Not if RS232 receiver/transmitter connected to Dev A







RXA (yellow)  ✓
 ✗ ?
 TXA (yellow)  ✓
 ✗ ?




OKA  ✓
 (green)  ✗


 ✗ Network Address Invalid
 0, 2, 3 or >119

LAN A  ✓ OKA  ✓
 ✗ INC2 Faulty

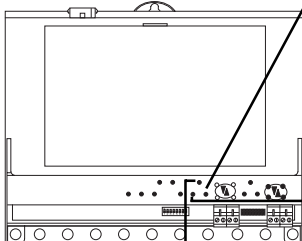
LAN A  ✓
 ✗





NBOX(B)/INC2  ✓ OKA  ✓
 Check network cabling for short circuits with a multimeter (NOT Megger)



NBOX(B)/INC2  ✓
 Check baud rate . Power up other nodes until faulty node is found (OK ). Correct fault.



18 Check Lan B 




Not if RS232 receiver/transmitter connected to Dev B







RXB (yellow)  ✓
 ✗ ?
 TXB (yellow)  ✓
 ✗ ?




OKB  ✓
 (green)  ✗

 ✗ Network Address Invalid
 0, 2, 3 or >119

LAN B  ✓ OKB  ✓
 ✗ INC2 Faulty

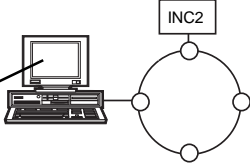
LAN B  ✓
 ✗

NBOX(B)/INC2  ✓ OKB  ✓
 Check network cabling for short circuits with a multimeter (NOT Megger)

NBOX(B)/INC2  ✓
 Check baud rate . Power up other nodes until faulty node is found (OK ). Correct fault.

3.2 Installation - Configuration (Continued)

19 Configure



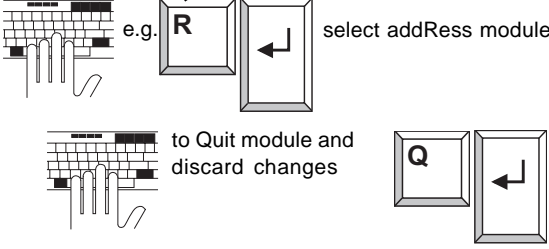
Use SET

Select from lanmap or set addresses as below:

- If on local Lan or autodialled Lan, set Lan = 0, address = 126.
Note address used for old INC, Lan 126, address 126, still works
- If using Internetwork or autodialled remote Lan, set Lan = switch setting, address = 126

Network Engineering Manual 92-1735
IQ Configuration Manual 90-1533
INC2 Data Sheet TA200209

Top Menu
INC2
User address



e.g. select addRes module

to eXit module having changed parameter

to Quit module and discard changes

Note that a PIN may be required to make changes in configuration mode. If the PIN has been forgotten the user should contact Trend Technical Support quoting the generator number (User module) whereupon a default PIN will be supplied. This will only work during the same configuration mode session i.e. the utility must not be exited between reading the generator and entering the default PIN. After the PIN is entered a new PIN should be set up and remembered.

20 Settings that may be changed
Set up following parameters if required

Parameter	Setting	Function	Condition	Note		
addRes	iDentifier	15 alphanumeric characters - not \/:?*" characters	Identifier for the lan (Lan A)	Always set for supervisors/Display Panels		
	Local Network alarms to	Address	node address 1, 4 to 9, 11 to 119	node address of INC2 alarm target for Lan A alarms	If Lan A alarms to be reported	1
		Remote lan	Lan number 1, 4 to 9, 11 to 119	Lan number of INC2 alarm target for Lan A alarms	If Lan A alarms to be reported	1
	Internetwork alarms to	addrEss	node address 1, 4 to 9, 11 to 119	node address of INC2 alarm target for Lan B alarms	If Lan B alarms to be reported	1
		remoTe lan	Lan number 1, 4 to 9, 11 to 119	Lan number of INC2 alarm target for Lan B alarms	If Lan B alarms to be reported	1
alarm language tyPe	0 to 9 (digits)	Selects language of network alarms	If language to be changed	2		
User	Pin	number	Protects changes in configuration mode	Default is blank (unprotected). Set up if security required.		
	generator	number	random number for default PIN generation	Read only, give to TechniCare for default PIN		

Notes

1. If set to zero - no alarms reported
2. Language tyPe values:
0=English, 1=Spanish, 2=Finnish, 3=Swedish, 4=Norwegian, 5=Danish, 6=German, 7=Italian, 8=Portuguese, 9=French.

21 Exit Configuration

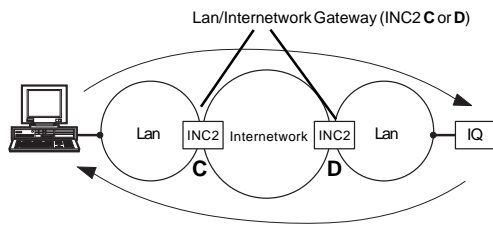


→ "Exit from Utility"

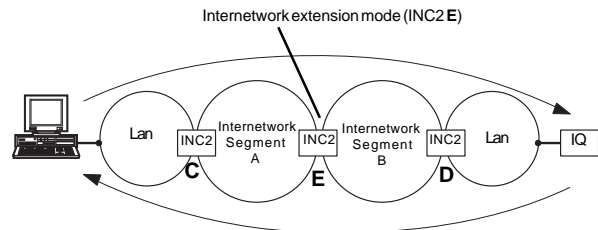
3.2 Installation - Configuration (Continued)

22 Check INC2 Operation

If operating in INC mode

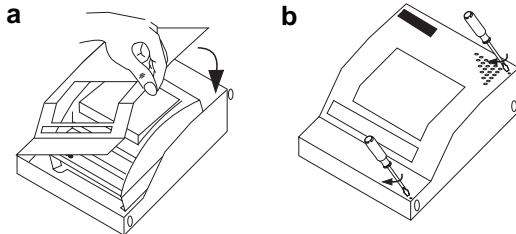


If Internetwork extension mode (dumb/normal = normal and address =>100)



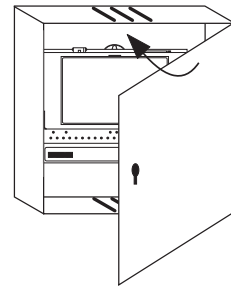
23 Close MBOX

if fitted in ENCLS/MBOX/IQ22x



24 Close Panel

NBOX/INC2/USA only



The unit is UL rated as 'UL916, accessory to open energy management equipment'

4 Disposal

**WEEE Directive :**

At the end of their useful life the packaging, and product should be disposed of by a suitable recycling centre.

Do not dispose of with normal household waste.
Do not burn.

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Manufactured for and on behalf of the Environmental and Combustion Controls Division of Honeywell Technologies Sàrl, Ecublens, Route du Bois 37, Switzerland by its Authorized Representative, Trend Control Systems Limited.

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