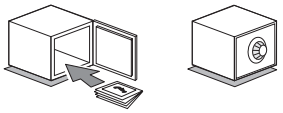
Installation Instructions

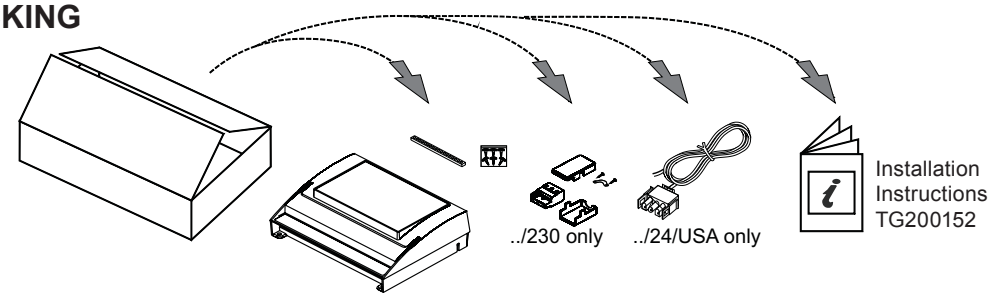
NBOX/EINC
Node Controller

Important: Retain these instructions

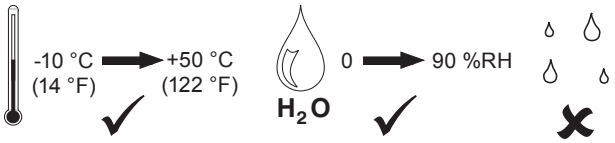


CONTENTS

1 UNPACKING



2 STORING

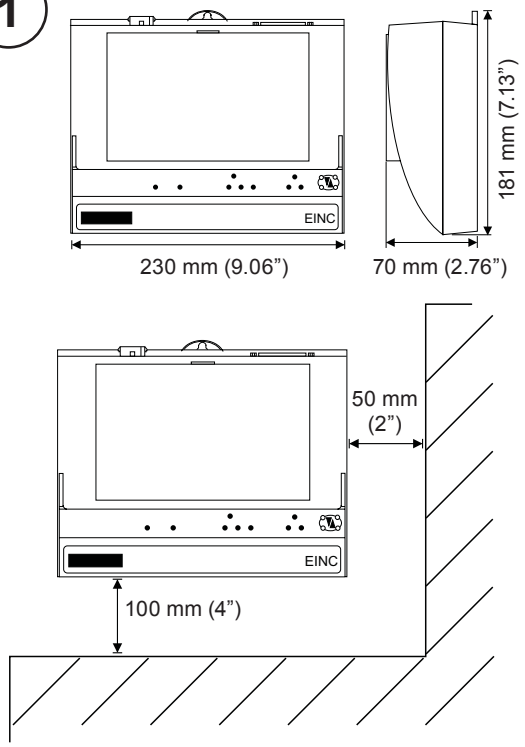


It is recommended that the installation should comply with the HSE Memorandum of Guidance on Electricity at Work Regulations 1989.
For USA install equipment in accordance with National Electric Code

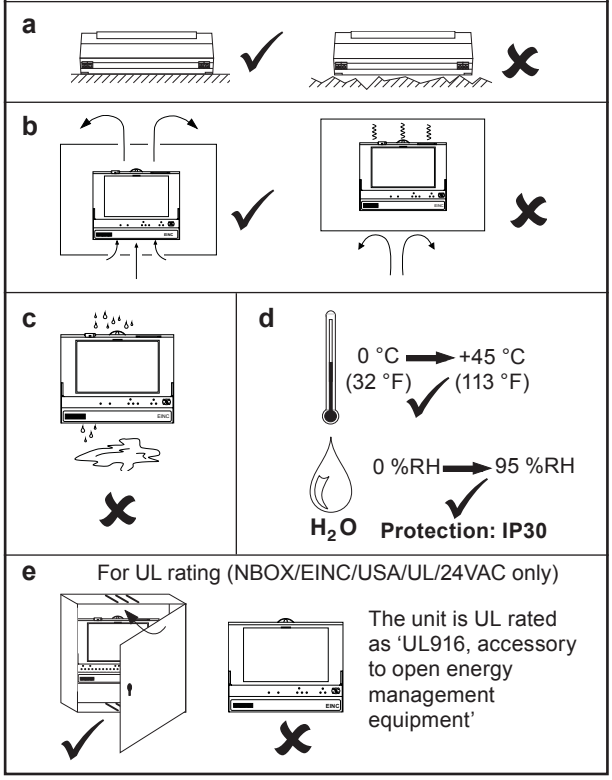
3 INSTALLATION

3.1 Installation - Mounting

1 Dimensions



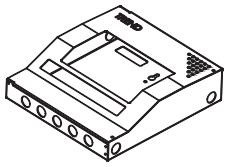
2 Mounting Requirements

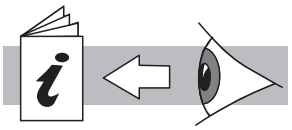


3.1 Installation - Mounting (continued)

3 Mount MBOX

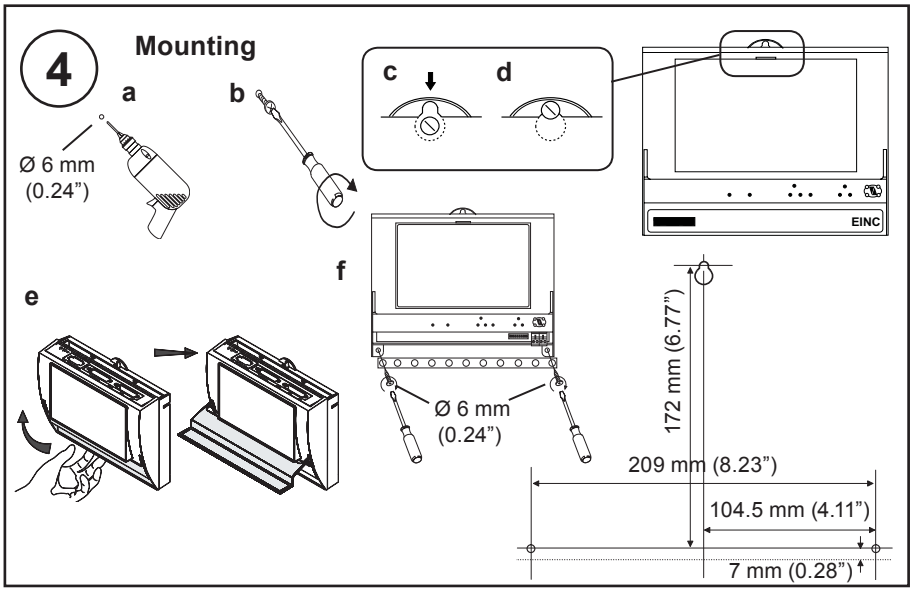
If using ENCLS/MBOX/IQ22x





ENCLS/MBOX/IQ22x Installation Instructions TG200203.

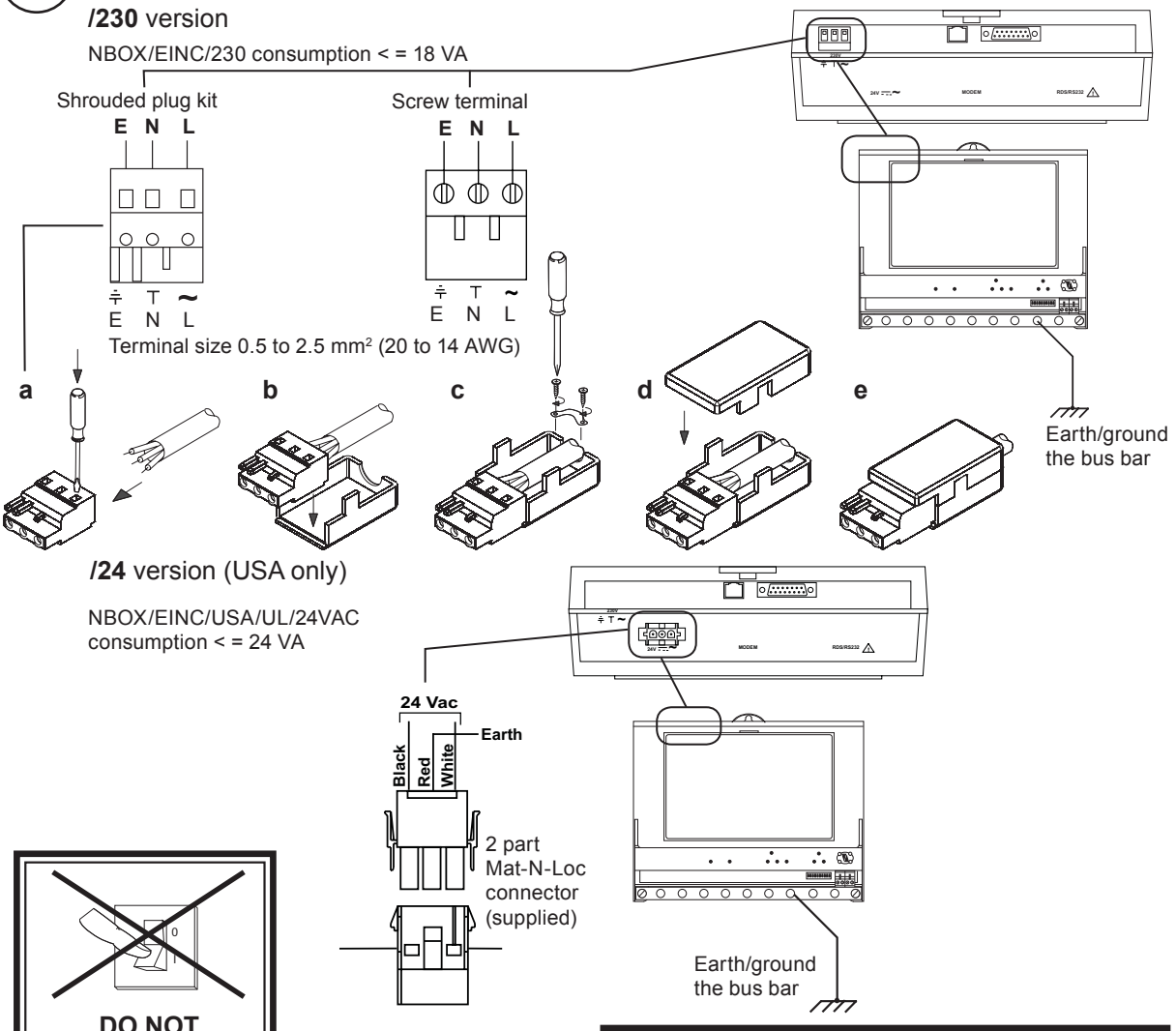
4 Mounting



5 Connecting Power

/230 version

NBOX/EINC/230 consumption < = 18 VA



/24 version (USA only)

NBOX/EINC/USA/UL/24VAC consumption < = 24 VA

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

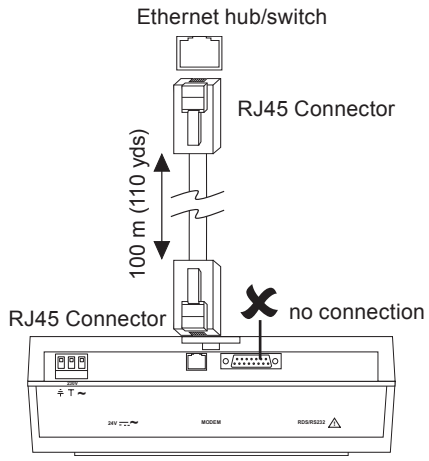
3.1 Installation - Mounting (continued)

6 Connect Ethernet

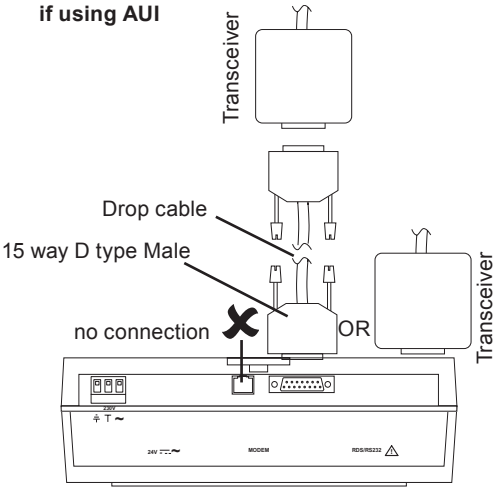
Always internetwork

IQ System Ethernet Products Engineering Guide, TE200369

if 10BASE-T



if using AUI



IMPORTANT
EINCs do NOT support automatic addressing, and MUST NOT be installed on an Ethernet network where automatic addressing is being used.

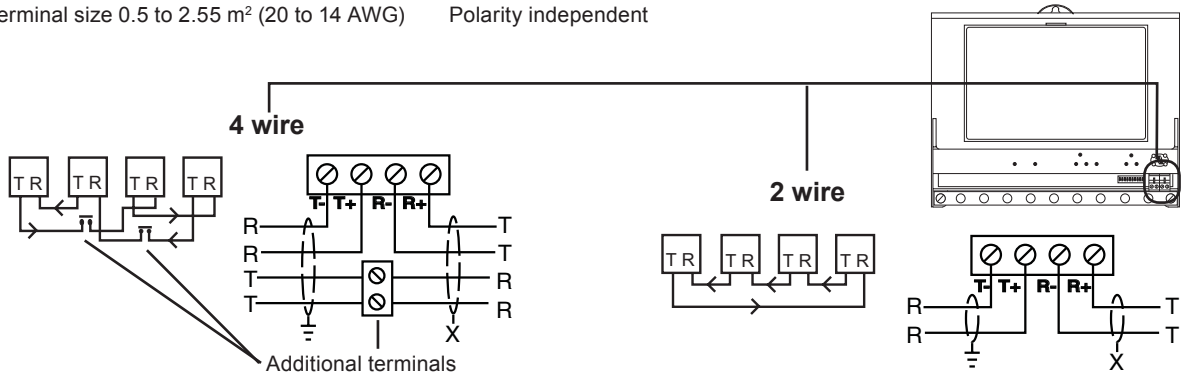
7 Connect Current Loop

Maximum Cable distance

Network Engineering Manual 92-1735

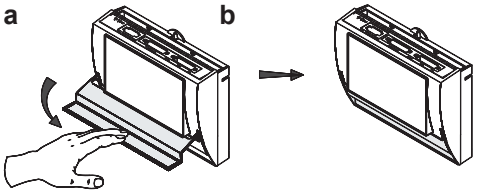
Cable	1k2 baud	9k6 baud	19k2 baud	38k4 baud	No. of Wires
Belden 9182	1000 m (1090 yds)	1000 m (1090 yds)	700 m (765 yds)	500 m (545 yds)	2
Belden 9207	1000 m (1090 yds)	1000 m (1090 yds)	500 m (545 yds)	350 m (380 yds)	2
Trend TP/1/1/22/HF/200 (Belden 8761)	1000 m (1090 yds)	700 m (765 yds)	350 m (380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

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



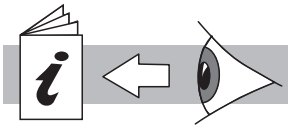
Note only one INC type node on a single Lan.

8 Close Flap



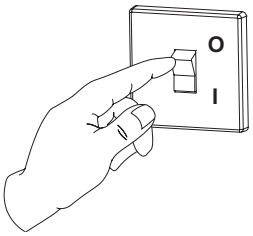
3.2 Installation - Configuring

1 **Mount Unit**



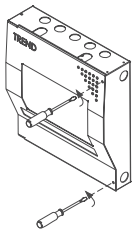
EINC Installation Instructions section 3.1

2 **Switch off**

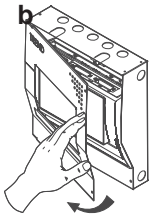


3 **Open Box** (If fitted in ENCLS/MBOX/IQ220)

a

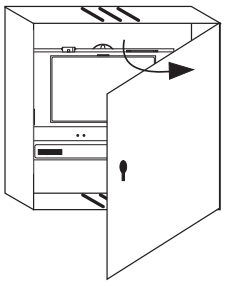


b

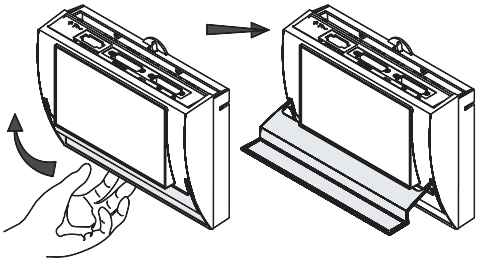


4 **Open Panel**

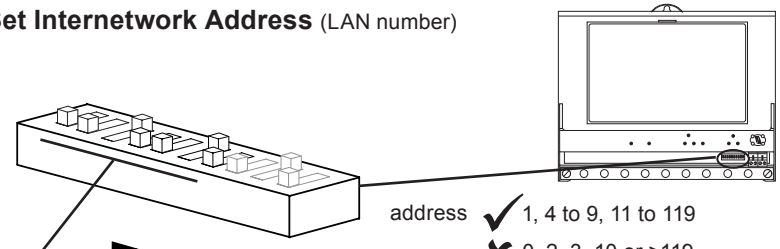
If appropriate



5 **Open Flap**

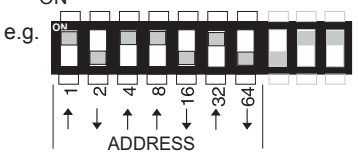


6 **Set Internetwork Address** (LAN number)



address ✓ 1, 4 to 9, 11 to 119

✗ 0, 2, 3, 10 or >119

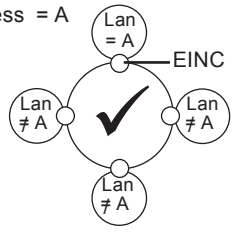


↑NOT SET

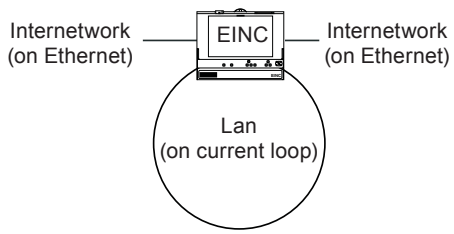
↓ SET

Address = 2 + 16 + 64 = 82

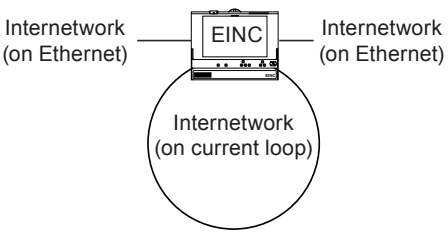
Address = A



If address < 100, INC Mode

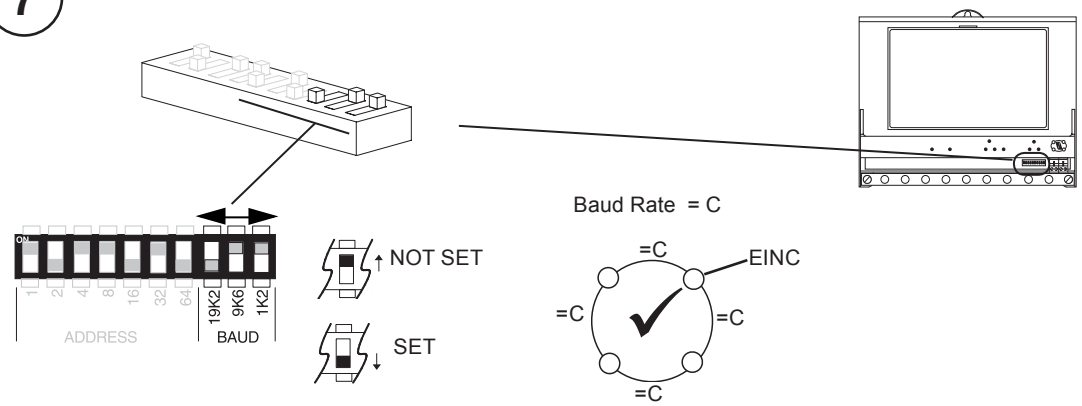


If address = > 100, Internetwork Extension Mode



3.2 Installation - Configuring (continued)

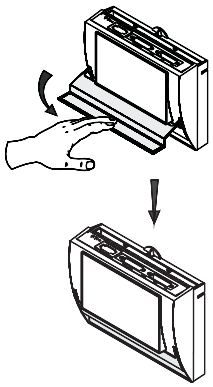
7 Set Current Looop Baud Rate



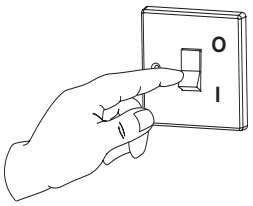
Note 1: 38k4 Lan not available with IQ2xx, IQ1xx, INC, LINC, CNC, CNC2, INC2,and TMN.

Note 2: 38k4 Internetwork not available with INC, and LINC.

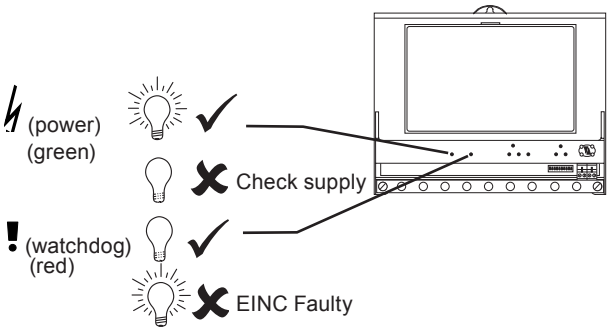
8 Close Flap



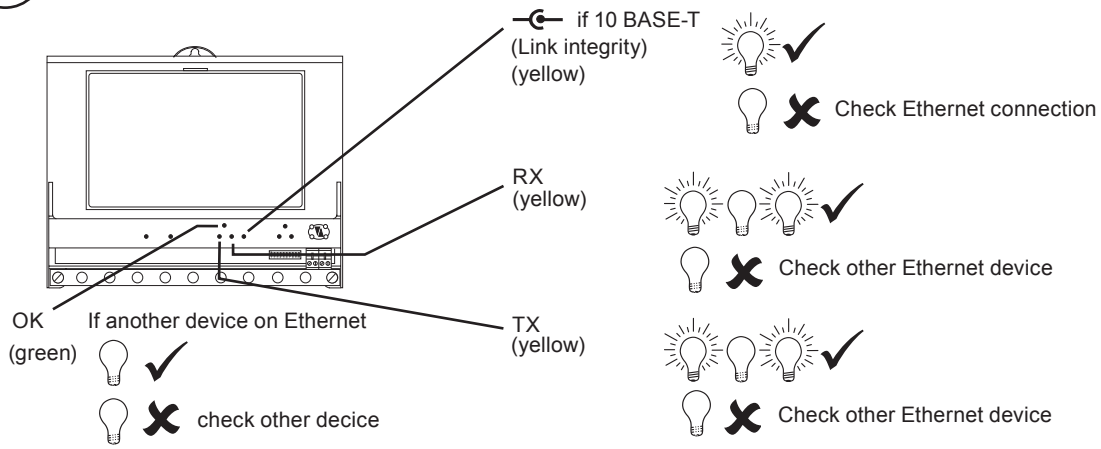
9 Switch On



10 Check Node Controller

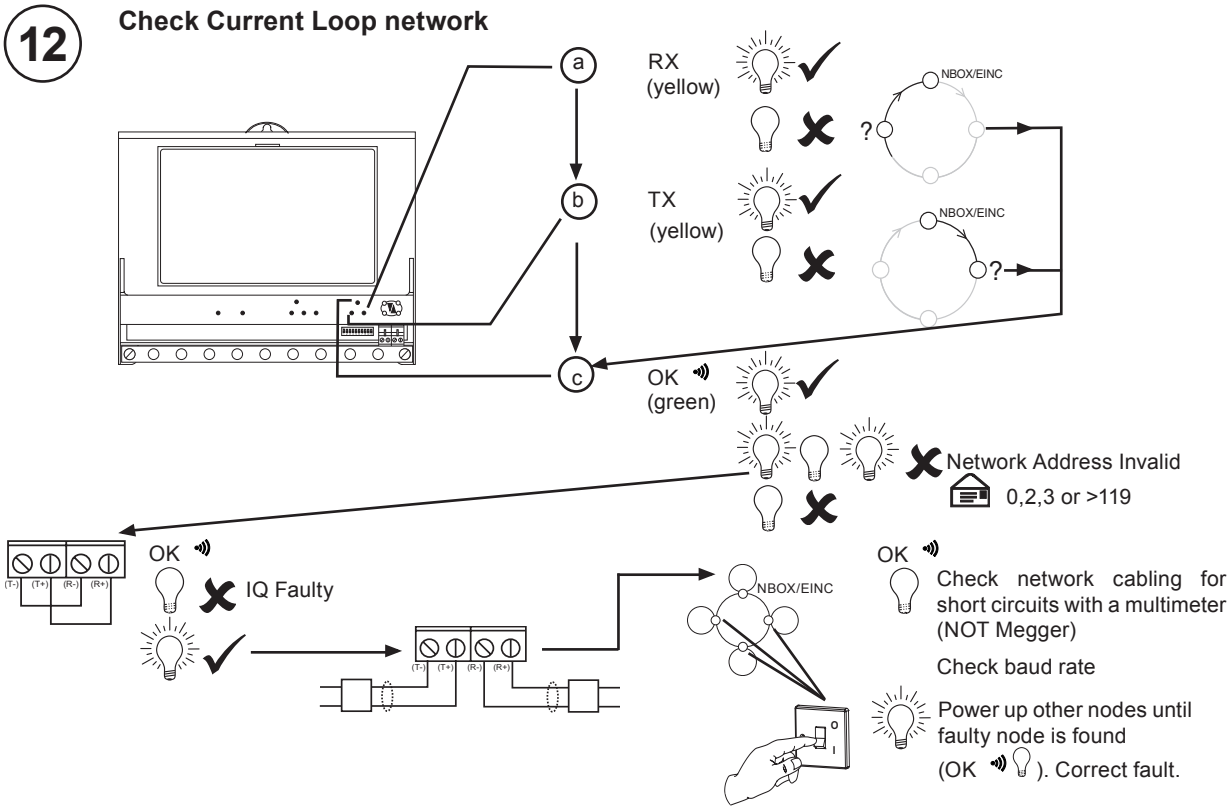


11 Check Ethernet



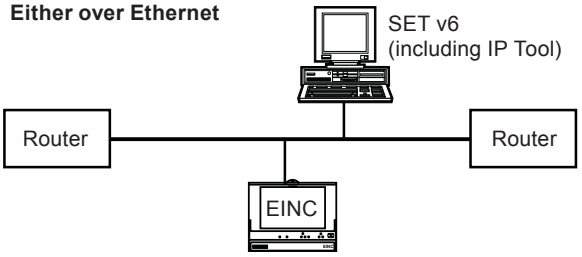
3.2 Installation - Configuring (continued)

12 Check Current Loop network



13 Connect to EINC with IP Tool

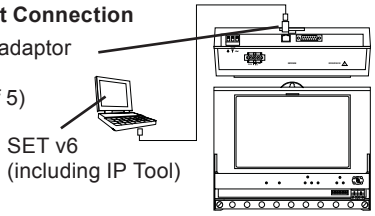
Either over Ethernet



Initially access EINC using its MAC address

or Local PC Ethernet Connection

XCITE/XA crossover adaptor order separately (XCITEXA/5 - pack of 5)



Local PC (Ethernet) connection can be either to adjacent Ethernet hub using standard cable only, or directly to EINC using standard cable and crossover adaptor, XCITE/XA.

SET Manual TE200147
IP Tool Manual TE200638

14 Configure Addressing Details with IPTool

EINC Data Sheet TA200137
IP Tool Manual TE200638

Parameter		Setting	Default	Function	Condition	Note
Address Module	IP Address	IP Address 0.0.0.0. to 255.255.255.255	128.1.1. <address switch>	Ethernet IP address	Last section set automatically to address switch setting	1
	Subnet Mask	Mask 0.0.0.0. to 255.255.255.255	255.255.255.0	Mask applied to IP address to generate subnet number	All EINCs on same channel must be on same subnet to create internetwork	1
	UDP Port	0 to 65535	57612	Ethernet UDP port used by IQ system equiped on Ethernet	All IQ system devices must use same port to intercommunicate	2
	Router 1	IP Address 0.0.0.0. to 255.255.255.255	0.0.0.0.	IP address of router on same subnet as EINC	MUST be set up for communications outside own subnet	3
	Lan number	Lan number 1, 4 to 9, 11 to 119	20	Lan number of EINC on internetwork <SET BY ADDRESS SWITCH>		4
	Identifier	15 alphanumeric characters - not /\{};?* characters	EINC	Identifier for EINC	Always set up for supervisors/display panels	

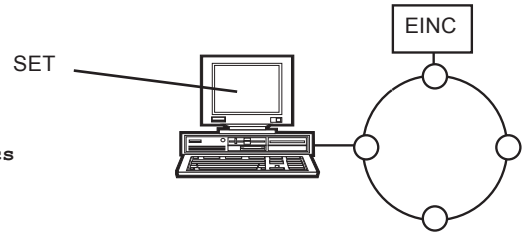
3.2 Installation - Configuring (continued)

14 Configure Addressing Details with IPTool (continued)

Parameter		Setting	Default	Function	Condition	Note
Virtual CNCx (x = 1 to 4)	CNC Address	node address 1, 4 to 9, 11 to 119	4	Node address of virtual CNC on virtual Trend Lan	If virtual CNC is to be used	5,6
	Port address	Ethernet port 1 to 32767	disabled	Ethernet port of virtual CNC	If virtual CNC is to be used and if default needs to be changed	6,7
	alarm IP address	IP address e.g. 171.193.6.106	disabled	IP address of target device (e.g. supervisor)	if CNC used in alarm mode	6,8
Remote Trend Device x (remote EINCs) (x = 1 to 20)	IP Address	IP address 0.0.0.0 to 255.255.255.255	empty list	IP address of IQ system Ethernet device other side of router	If network to span router	9, 10
	Subnet Mask	Mask 0.0.0.0 to 255.255.255.255	empty list	Subnet mask of IQ system Ethernet device other side of router		
Device Mode		networked	unconfigured	networked/stand alone on Ethernet	Set to stand alone if only IQ system device on Ethernet	11

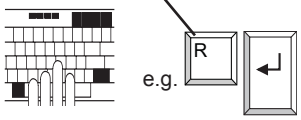
1. Change if address clash on Ethernet or if routers between EINCs.
2. May change UDP port if port already used on Ethernet, or if multiple internetworks (i.e. sites) required on subnet (see Data Sheet).
3. Enables EINC virtual CNC to access Ethernet PC across router, or EINC to find other IQ system Ethernet devices across router.
4. Also used by IQ system Supervisors and software tools to access EINC (Device address always 126).
5. Virtual CNCs inoperative until address set up.
6. Set up each virtual CNC used, separately.
7. Same port number to be set up in supervisor to communicate with virtual CNC.
8. Use virtual CNC in alarm mode to send alarms to Ethernet 962 v3 or greater/963 which connects via TCP dial up.
9. Lowest IP address (IQ3xcite or EINC) on each subnet across router to be set up; as many as possible in each subnet recommended.
10. If using 'updatelist' facility (not recommeded for mixed EINC/IQ3xcite system) also set up this EINC's details (and other EINC's on this EINC's subnet, if not broadcast).
11. Out of the factory mode is 'unconfigured' which changes to 'networked' on first write to EINC by IPTool.

15 Configure

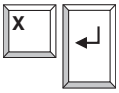


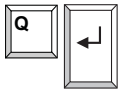
Note that configuration of EINC over Ethernet is possible via a virtual CNC once the virtual CNC address is set up and if IP addressing is set up correctly in both PC and EINC (see step 14)

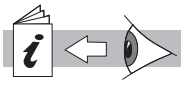
Top Menu
User addRes rouTer virtualCncs
remoteEincs uPdatelist



e.g. select addRess module

to eXit module having changed parameter 

to Quit module and discard changes 



SET Manual TE200147
EINC Data Sheet TA200137
IQ System Ethernet Products Engineering Guide TE22369

Note that a PIN may be required to make changes in configuration mode. If the PIN has been forgotten the user should contact Technical Support quoting the generator number (User module) and MAC address (address 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.

3.2 Installation - Configuring (continued)

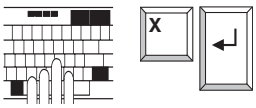
16 Configure Optional Settings Using SET

SET Manual TE200147
EINC Data Sheet TA200137

Parameter			Setting	Function	Condition	Note
addRess	iDentifier		15 alphanumeric characters - not /\{{;?* characters	Identifier for Lan	Always set for supervisors/Display Panels	
	local network alarms to	Address	node address 1, 4-9, 11-119	node address of EINC alarm target for Trend current loop network alarms	If current loop network alarms to be reported	1
		Remote lan	Lan number 1, 4-9, 11-119	Lan number of EINC alarm target for Trend current loop network alarms	If current loop network alarms to be reported	1
	ethernet alarms to	addrEss	node address 1, 4-9, 11-119	node address of EINC alarm target for Ethernet alarms	If Ethernet alarms to be reported	1
		remoTe lan	Lan number 1, 4-9, 11-119	Lan number of EINC alarm target for Ethernet alarms	If Ethernet alarms to be reported	1
	alarm language tyPe		0 to 9 (digit)	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 Technical Support with Ethernet mac address for default PIN see step 15..	
remoteEincs	send as Broadcast		Y (1) or N (0)	Broadcast to EINC subnet if Y or directed to 1 EINC on subnet if N	Default Y, broadcast. Change if broadcast messages prohibited by router	3
uPdatelist	Copy your remote EINC list to other EINCs (Y/N)		Copies remoteEincs list to local subnet and all subnets with EINC in list		If internetwork to span router, and to faciliate setup	4

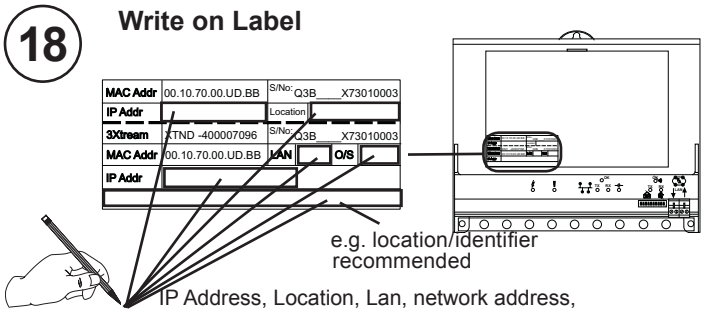
1 If set to zero - no alarms reported.
2 Language type values:0=English, 1=Spanish, 2=Finnish, 3=Swedish, 4=Norwegian, 5=Danish, 6=German, 7=Italian, 8=Portuguese, 9=French.
3 Broadcast preferable as it enables the internetwork link to be made by way of the subnet of EINCs across router, rather than one EINC. However, normally stopped by router.
4 This facility allows **remoteEincs** list in one EINC to be set up, and then the list (including Broadcast status) to be copied to all other EINCs so that internetwork across routers can be formed (not recommended for mixed EINC/IQ3 system).

17 Exit from Configuration



Exit From Utility

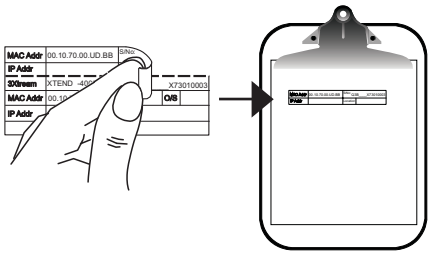
18 Write on Label



e.g. location/identifier recommended

IP Address, Location, Lan, network address,

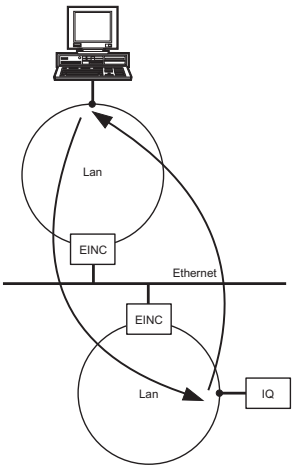
19 Tear off Label Strip



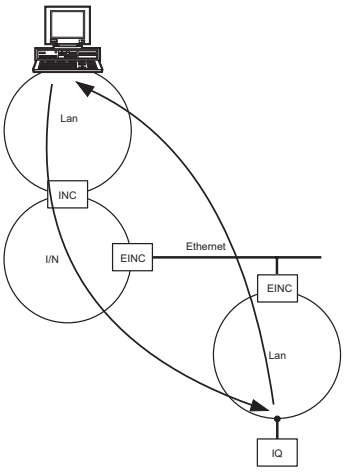
3.2 Installation - Configuring (continued)

20 Check Communications

If address <100

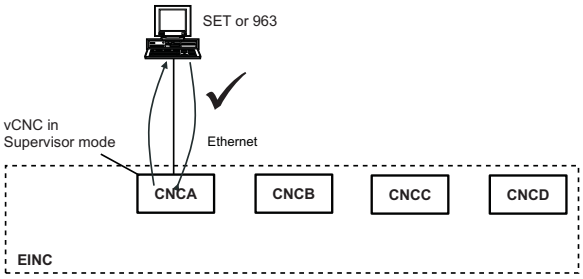


If address =>100

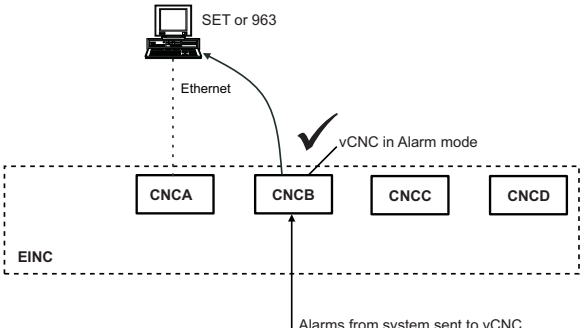


21 Check Virtual CNCs

Virtual CNC in Supervisor Mode



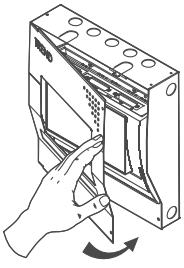
Virtual CNC in Alarm Mode



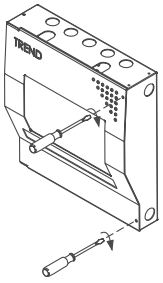
22 Close MBOX

if fitted in ENCLS/MBOX/IQ22x

a



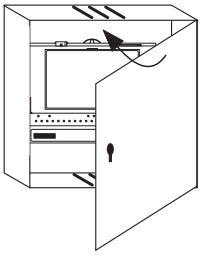
b



23 Close Panel

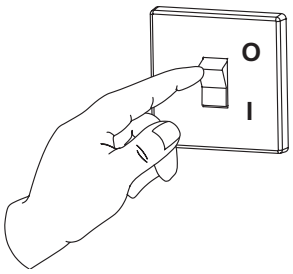
For UL rating (NBOX/EINC/USA/UL/24VAC)

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

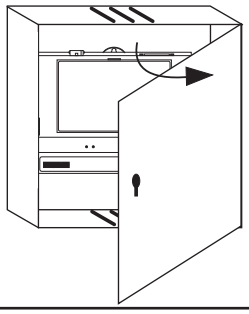


4 Replacing the Fuse

1 **Switch Off**



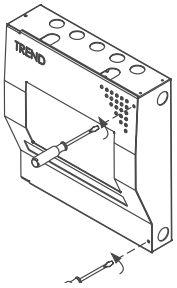
2 **Open Panel** (if appropriate)



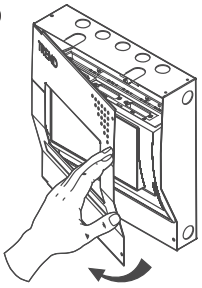
3 **Open MBOX**

(if fitted in ENCLS/MBOX/IQ22x)

a

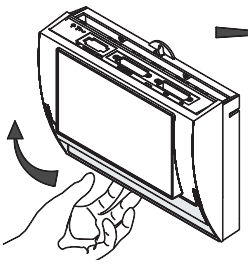


b

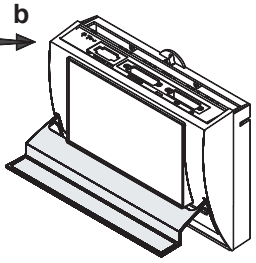


4 **Open Flap**

a

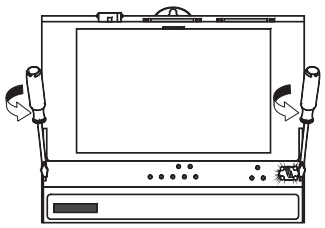


b

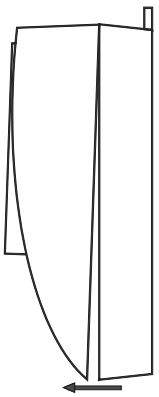


5 **Remove cover**

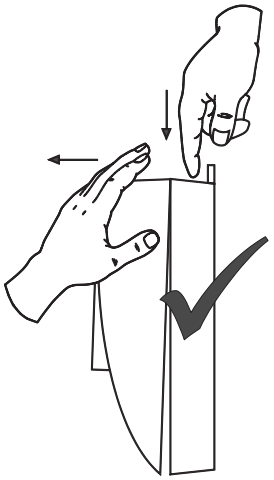
a



b

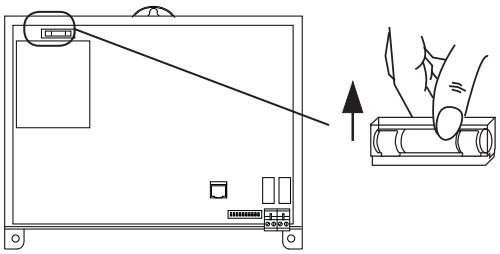


c



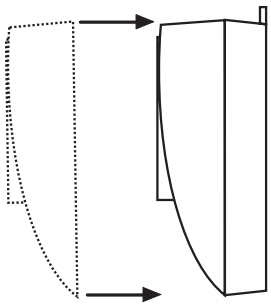
Caution: This unit contains static sensitive devices. Suitable anti-static precautions should be taken throughout this operation to prevent damage to the unit. 417-IEC-5134

6 **Replace Fuse**



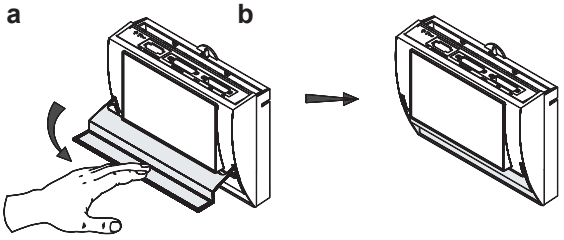
4 Replacing the Fuse (continued)

7 **Replace Cover**



8 **Close Flap**

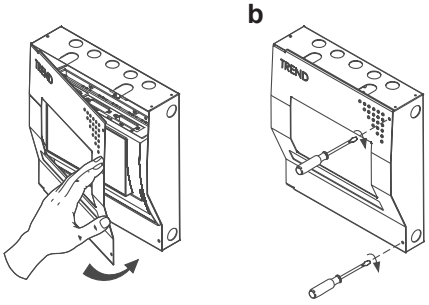
a b



9 **Close MBOX**

(if fitted in ENCLS/MBOX/IQ22x)

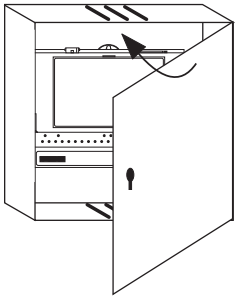
a b



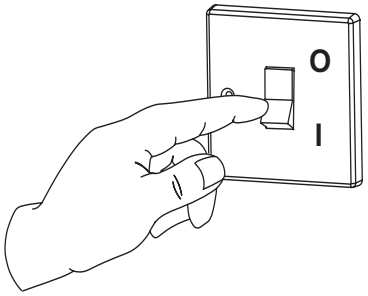
10 **Close Panel**

For UL rating (NBOX/EINC/USA/UL/24VAC

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



11 **Switch On**



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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Trend Control Systems Limited
Albery House, Springfield Road, Horsham, West Sussex, RH12 2PQ, UK. Tel:+44 (0)1403 211888 Fax:+44 (0)1403 241608 www.trendcontrols.com
Trend Control System USA
6670 185th Avenue NE, Redmond, Washington 98052, USA. Tel:(425) 869-3900 Fax:(425) 869-8445 www.trendcontrols.com