Important: Retain these instructions
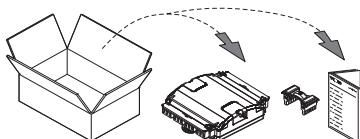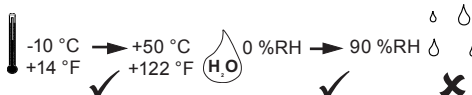
1   UNPACKING

XCITE/IO Standard I/O Modules Installation Instructions TG200627

2   STORING

-10 °C → +50 °C   0 %RH → 90 %RH
+14 °F   +122 °F (H_2O)

✓   ✓   ✗

3   INSTALLING

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.
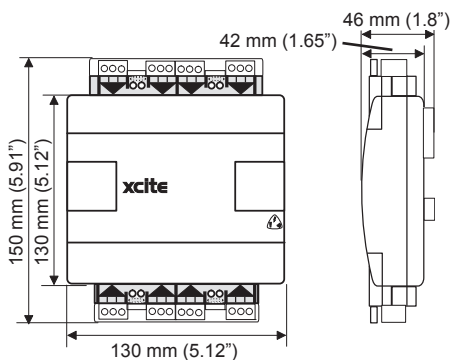
WARNING: If the unit is used in a manner other than that specified in these instructions, the protection provided by the unit may be impaired.

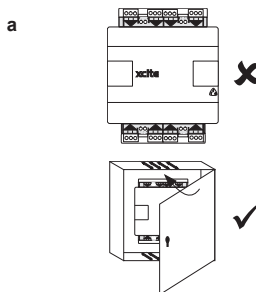*Note that XCITE/IO modules can only be fitted to IQ3XCITE/**96**/..and /**128** (not to IQ3XCITE/**16**/..., IQ3XCITE/**00**/.. or IQ3XACT)*

① Dimensions

46 mm (1.8")
42 mm (1.65")

150 mm (5.91")
130 mm (5.12")

xcite

130 mm (5.12")

② Requirements

a

xcite   ✗

✓

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

continued next page ⇨

3   INSTALLING (continued)

2   **Requirements** (continued)
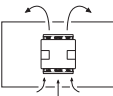
b
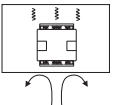$0\ °C$ → $+45\ °C$ ✓
$32\ °F$ $+113\ °F$

H_2O $0\ \%RH$ → $90\ \%RH$ ✓
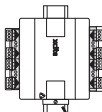
Protection: IP20, NEMA1

C
✓
✗
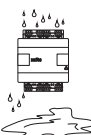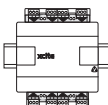
d
✗
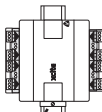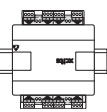
e
✓
✗
✓
DIN rail
end stop
✓
✗

3   **Mounting**
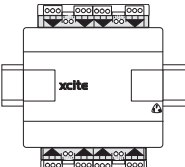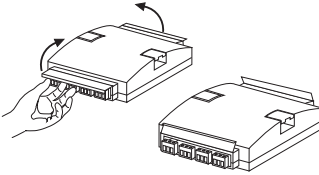
a   b   c

4   **Lift I/O Terminal Covers**

3   INSTALLING (continued)

5 **Connect Universal Inputs** **N**   (Universal input I/O modules only)
XCITE/IO/8UI channels 1 to 8, ../4UI channels 1 to 4
../4UI/4AO, channels 1 to 4, ../2UI/2AO channels 1 to 2
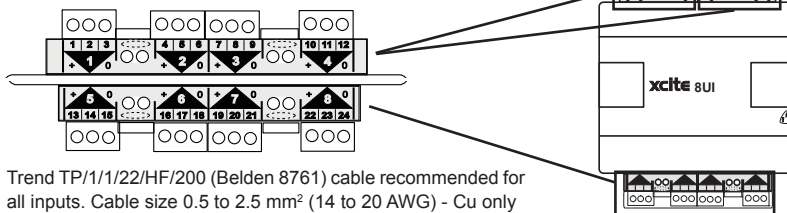
Trend TP/1/1/22/HF/200 (Belden 8761) cable recommended for all inputs. Cable size 0.5 to 2.5 mm² (14 to 20 AWG) - Cu only

EN61010:2001 **MEASUREMENT CATEGORY 1**. Separate from 230 Vac supply by double or reinforced insulation

Voltage input

linking

V

Note that setting input links is described in XCITE I/O Installation Instructions – Configuration TG201161, section 1 step 7.
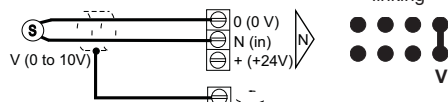
Current input (loop powered)

SIG →I (0 to 20 mA)

linking

I

(20 to 36 V)
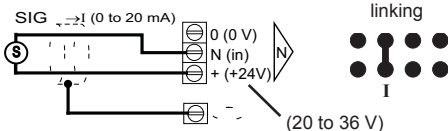
Current input (external powered)

0V

linking

I

Thermistor input

5 V bridge supply
linking

T

Digital input

5 V supply
linking

D

logic

open collector

volt free contact

3   INSTALLING (continued)

6 **Segregate Screen Earths (Grounds)** ⊂⊃
(Universal input I/O modules only)

if required to segregate screen earths (grounds) from I/O module earth (ground)

Separate earth (ground) connection

Note that screen earth (ground) link(s) must be cut (see XCITE I/O Installation Instructions – Configuration TG201161, section 1 step 8.

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

7 **Connect Digital Inputs** ⟍N⟍   **(Digital input I/O modules only)**
XCITE/IO/16DI channels 1 to 16, ../8DI channels 1 to 8

Trend TP/1/1/22/HF/200 (Belden 8761) cable recommended for all inputs

EN61010:2001 **MEASUREMENT CATEGORY 1**.
Separate from 230 Vac supply by double or reinforced insulation
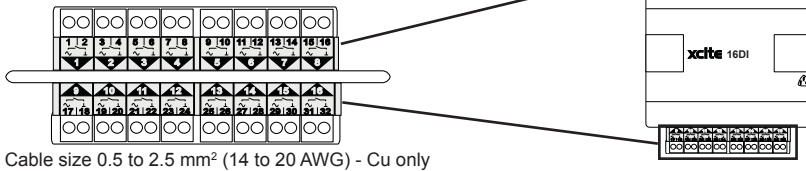
Cable size 0.5 to 2.5 mm² (14 to 20 AWG) - Cu only

Volt free contact input

Open collector type input

0 V
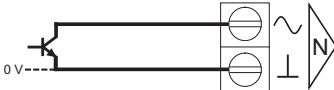
Logic input
   logic high = 5 to 50 V
   logic low = sink >3 mA

e.g. TTL CMOS

3 mA

0 V
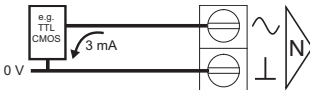
Note that logic low on input produces ON state in IQ3

24 Vac input

24 Vac ±20%
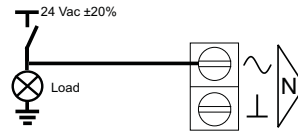
Load

For the above configuration the load impedance must exceed 1.6 kohms (e.g. an LED); if it does not (e.g. filament lamp or relay coil) then a 1.6 kohm resistor should be fitted in series with the input as shown below.

24 Vac ±20%

1K6

Load (<1.6kΩ)
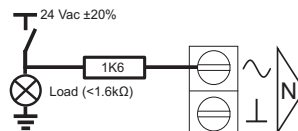
3   INSTALLING (continued)

8 **Connect Thermistor Inputs** N
(Thermistor input I/O modules only)

XCITE/IO/8DI/8TI channels 9 to 16

Trend TP/1/1/22/HF/200 (Belden 8761) cable recommended for all inputs

9 **Connect Analogue Outputs** N
(Analogue output I/O modules only)
XCITE/IO/4UI/4AO, channels 5 to 8, ../2UI/2AO channels 5 to 6
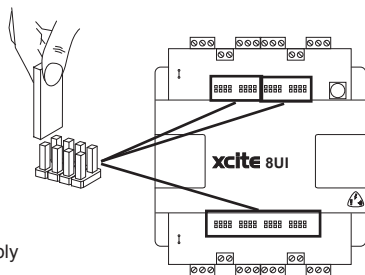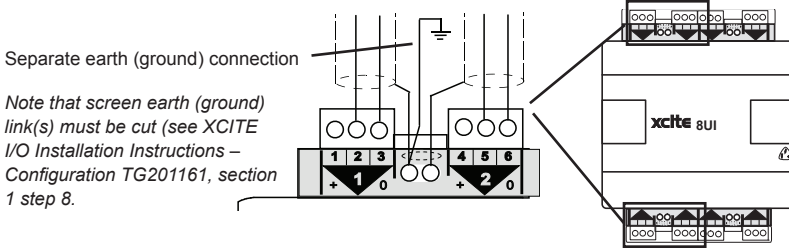../8AO, channels 1 to 8, ../4AO channels 1 to 4

Trend TP/1/1/22/HF/200 (Belden 8761) cable recommended for analogue outputs

If screened cable is used, terminate screen to earth at one end
EN61010:2001 **MEASUREMENT CATEGORY 1**.
Separate from 230 Vac supply by double or reinforced insulation

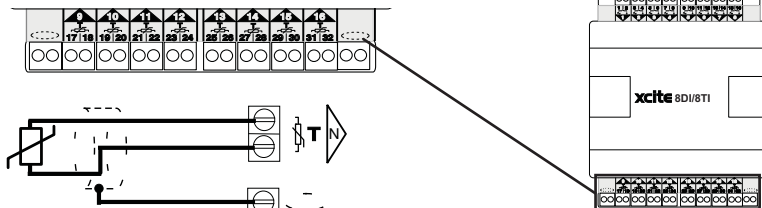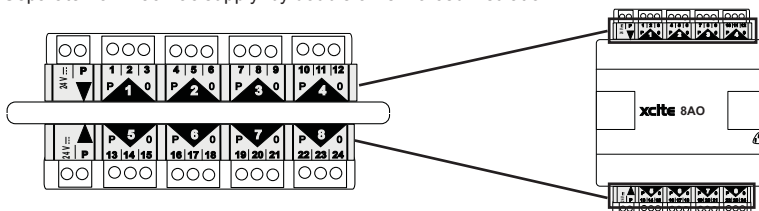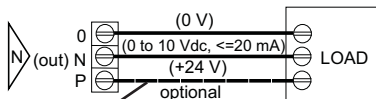Cable size 0.5 to 2.5 mm^2 (14 to 20 AWG) - Cu only

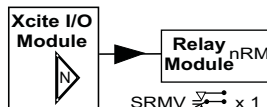If P terminal used, P input terminal must be connected as in step 10 below.

WARNING
If external supply is used to supply P input terminal, note whether P bus is 24 Vac or 24 Vdc and only connect appropriate devices to P output terminals.

Additional Relay Modules

Xcite I/O Module N → Relay Module nRM

SRMV $\rightleftharpoons$ x 1

2SRM $\rightleftharpoons$ x 2

2RM = $\rightleftharpoons$ x 2

3RM = $\rightleftharpoons$ x 3

6RM = $\rightleftharpoons$ x 6

e.g.

SRMAC
Analogue outputs are not suitable for ac relays
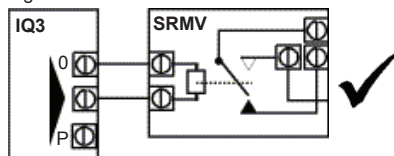
3   INSTALLING (continued)

10   **Connect Output Power (P)**
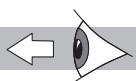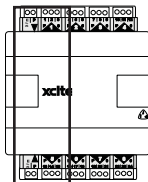   **(Analogue output I/O modules only)**
          If (**P**) used in step 9 above

Check current availability from I/O bus connector
24 Vdc terminal and from 24 Vdc auxiliary supply:

IQ3 Data Sheet
TA200505

terminal size 0.5 to 2.5 mm^2
(14 to 20 AWG)

either use I/O module 24 Vdc auxiliary supply
current <= 150 mA

or use 24 Vdc or 24Vac external supply

Fit external link
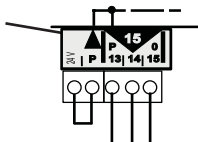
*Note that the 24 Vdc auxiliary supply is normally
about 19.8 V and drops to about 18.4 V at full load.*
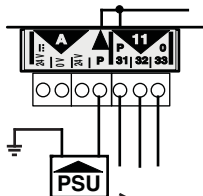
External PSU

WARNING
External PSU must be dedicated to I/O
channel use, and comply with relevant
EMC and safety standards

*Note that if P bus is 24 Vdc or 24 Vac, and only connect appropriate devices to P output terminals
in step 9 above*

3   INSTALLING (continued)

11   **Connect Relay Outputs**
(Relay output I/O modules only)

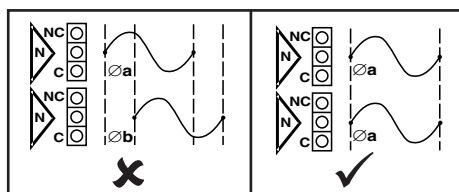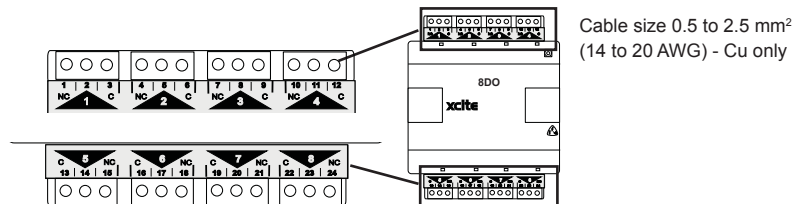XCITE/8DO, ../8DO/HOA channels 1 to 8, ../4DO, ../4DO/HOA channels 1 to 4

5A maximum at 240 Vac, single phase throughout, resistive or inductive (Cos Ø>=0.4)
5 A at 30 Vdc (resistive), 2 A at 24 Vdc (inductive, T<=30 ms)
Note that the UL rating applies up to 240 V 120 VA maximum

Cable size 0.5 to 2.5 mm²
(14 to 20 AWG) - Cu only

WARNING: The wires may be connected to hazardous voltages. Disconnect power before attempting any wiring.
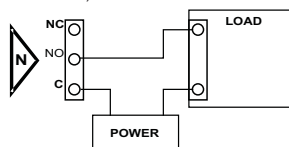
Arc suppression recommended

Relay Output Arc Suppression Installation Instructions TG200208

Driver on, Load on

Driver off, Load on

2 outputs - Raise/Lower
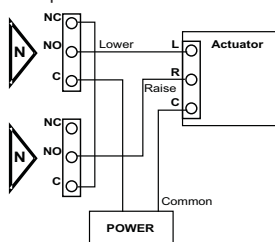
3   INSTALLING (continued)

(12) **Install IQ3xcite Controller**
(IQ3XCITE/**96** and /**128** only)

IQ3xcite Installation
Instructions - Mounting,
TG200626 - Section 3 steps 1
to 11 only

**DO NOT
SWITCH ON**

3   INSTALLING (continued)

13   **Connect I/O Bus**

- **A maximum of 15 I/O modules can be connected.**
- **A maximum of 96 points (on IQ3XCITE/96) or 128 points (on IQ3XCITE/128) can be used: 16 points in the IQ3xcite and 80 or 112 expansion points.**
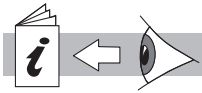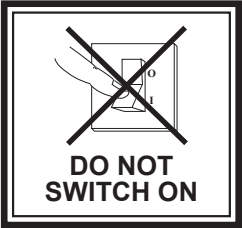- **The maximum bus length is 30 m (rigid interconnectors can be ignored).**
- **The controller and its I/O modules are to be fitted inside enclosures**
- **No spurs are allowed on the I/O bus**
- If a single earth (ground) screened and bonded contiguous metal enclosure is used, then total I/O bus length can be up to 30 m (includes use of multisection panels e.g. Form 4 enclosures) **If any other type of enclosure is used, or I/O bus runs between enclosures, then total I/O bus cable length can be up to 10 m.** (For cable length calculation, rigid interconnectors can be ignored)
- **Mutiple enclosures must be earthed (grounded) to a common earth (ground) point** (according to latest IEE Regs).
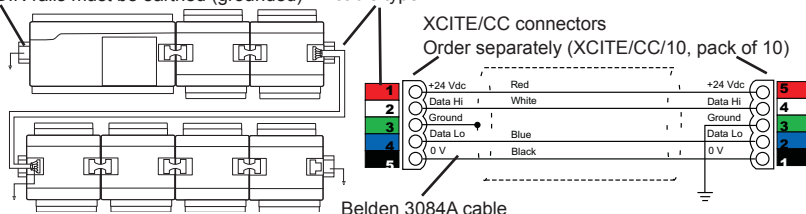
a   Open flaps
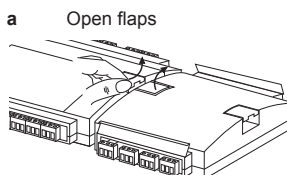
b   **either** use XCITE/IC interconnector (supplied with I/O module)

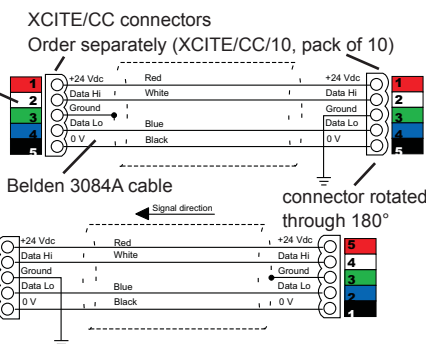XCITE/IC interconnector (supplied)
(XCITE/IC/5, pack of 5 available separately)
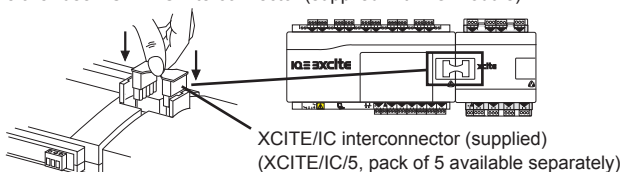
or wire special cable using XCITE/CC connectors and Belden 3084A cable

DIN rails must be earthed (grounded)   cable type A

XCITE/CC connectors
Order separately (XCITE/CC/10, pack of 10)

Belden 3084A cable

XCITE/CC connectors
Order separately (XCITE/CC/10, pack of 10)

cable type B
right to right

Belden 3084A cable

connector rotated
through 180°

cable type B
left to left

Signal direction

DIN rails must be earthed (grounded)

3   INSTALLING (continued)

13 **Connect I/O Bus** (continued)

Fully screened and bonded contiguous multi-section cabinet

type B

type A

type B

terminator
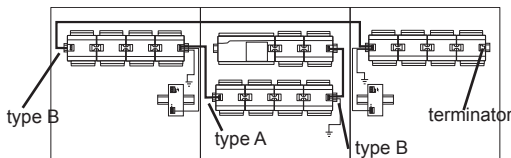
An additional 24 Vdc ±15% power supply must be used to supply the IO modules if:
- There are more than 6 I/O modules (**except for 16/DI, /8DI, /8DI/8TI, /8AO, /4DO/HOA, /8DO/HOA, /4AO, /4DO** (serial No. >= M3D4 CO 508 012), **/8DO** (serial No. >= M3D8 CO 508 0136); which do not need to be included in the count).

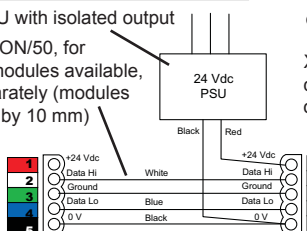or - The main controller 24 Vdc combined supply would be overloaded

WARNING: External PSU must have isolated output and comply with relevant EMC and safety standards
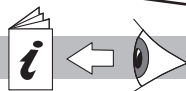
Check IQ3xcite 24 Vdc combined supply output current availability: IQ3 Data Sheet TA200505
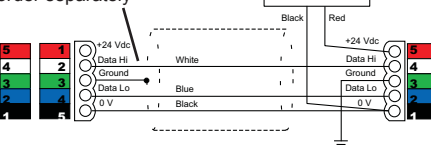
external PSU with isolated output

XCITE/PCON/50, for adjacent modules available, order separately (modules separated by 10 mm)

24 Vdc PSU

Black   Red

+24 Vdc
Data Hi   White   Data Hi
Ground   Ground
Data Lo   Blue   Data Lo
0 V   Black   0 V

external PSU with isolated output

XCITE/PCON/1000, 1 metre cable (type A) available, order separately

24 Vdc PSU

Black   Red

+24 Vdc
Data Hi   White
Ground
Data Lo   Blue
0 V   Black
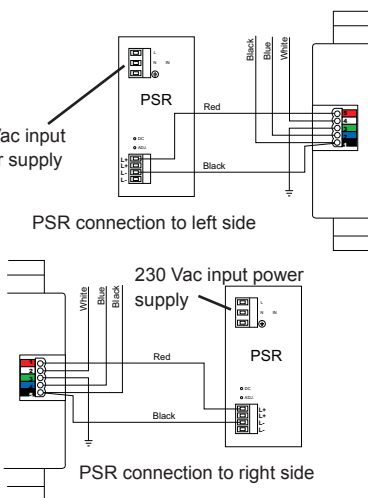
+24 Vdc
Data Hi
Ground
Data Lo
0 V

Trend can supply the PSR range of DIN rail mounted auxiliary power supplies (e.g. 1.3 A, 2.5 A, or 5A). They have isolated outputs.

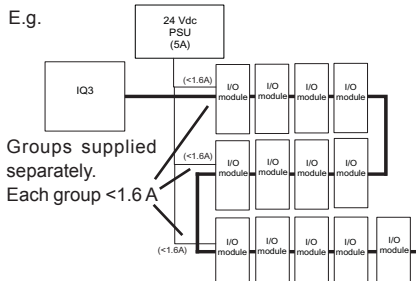WARNING: Ensure maximum current passing through any I/O module's 24 Vdc terminal is **< 1.6 A.**
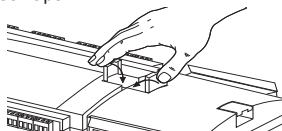
PSR

Black Blue White

Red

Black

230 Vac input power supply

PSR connection to left side

E.g.

24 Vdc PSU (5A)

IQ3

(<1.6A)

I/O module | I/O module | I/O module | I/O module

(<1.6A)

I/O module | I/O module | I/O module | I/O module

(<1.6A)

I/O module | I/O module | I/O module | I/O module | I/O module

Groups supplied separately. Each group <1.6 A

230 Vac input power supply

White Blue Black

PSR

Red

Black

PSR connection to right side

c   Close flaps

3   INSTALLING (continued)

14 **Terminate I/O Bus**
on I/O module at opposite end of I/O bus from main IQ3xcite controller
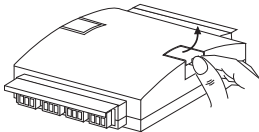
a Open flap   **b** Plug in terminator   **c** Close flap
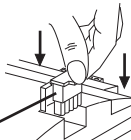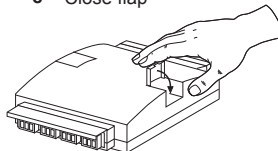
XCITE/TERM terminator (supplied with controller)
(XCITE/TERM/5, pack of 5 available separately)

15 **Lower I/O Terminal covers**
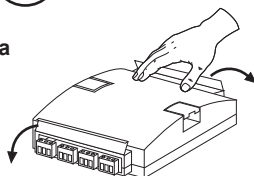
a   **b**
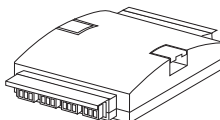
16 **Configure I/O Module**
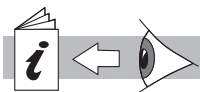
i   XCITE I/O Installation Instructions - Configuration, TG201161

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.