

VAMP ARC-I/O network installation rules

VAMP 221, 321 and I/O-unit, v6

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Aug 28, 2014

New ARC-I/O unit network installation rules

Date: 27 Aug, 2014

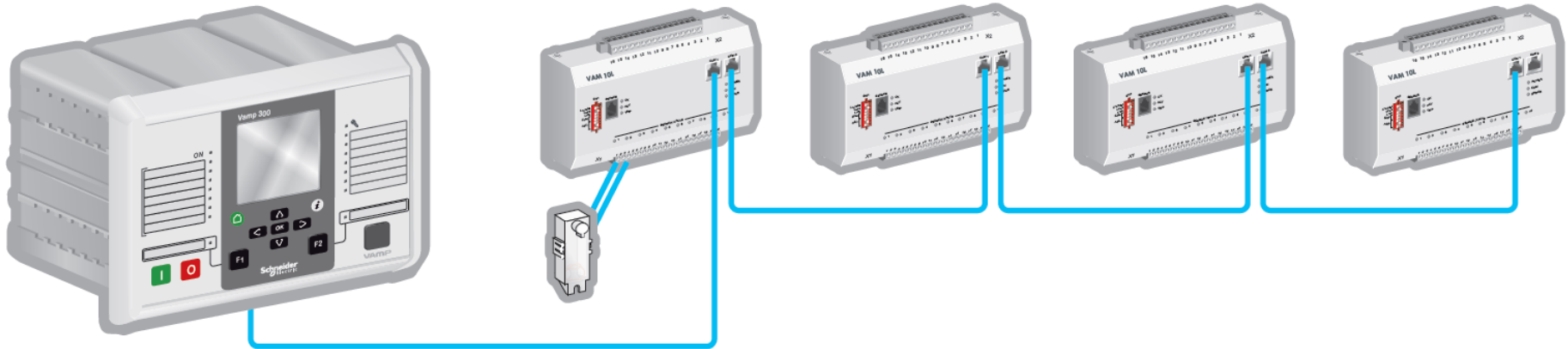
The new rules presented in this document has been in use since 4 July, 2014 and replace the ones

- shown elsewhere ⁽¹⁾ and published before above stated date
- have become possible “defacto” installation practise

1) Possible sources where old data could have previously been shown are:

- User’s documentation
- Product brochures
- Product presentations
- Film or video
- Connection diagrams
- Commercial quotations
- Human-to-human discussion

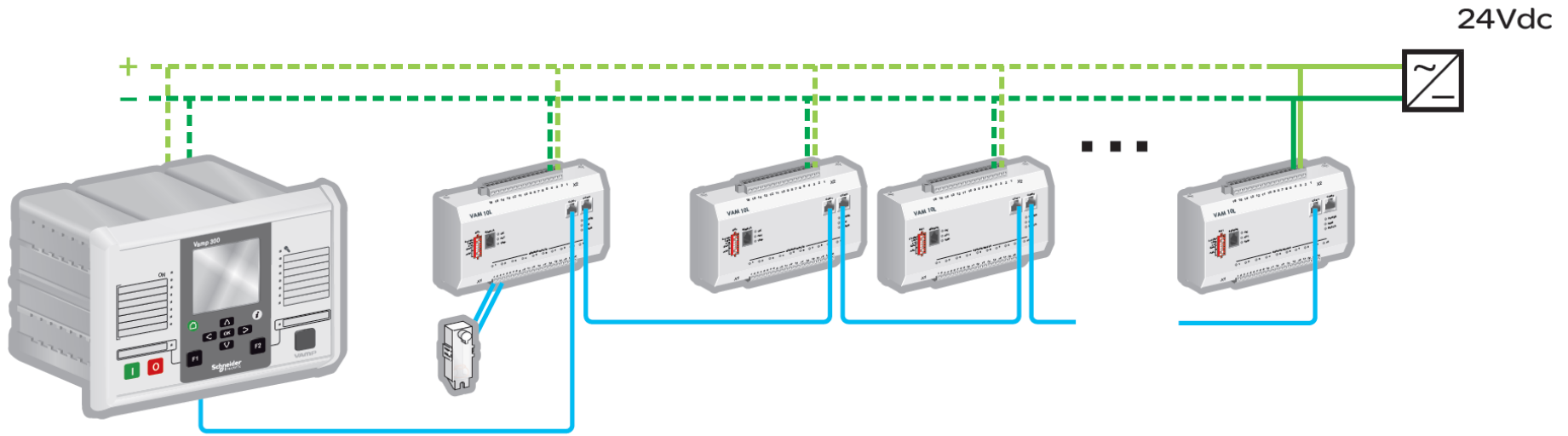
Small systems, amount of I/O units ≤ 4



Only one controller device, VAMP 221 or VAMP 321 without external supply units or supply cabling

- Maximum 4 I/O units with fully populated sensor inputs
- Maximum 30 m (98 ft) of VX001 cabling, including all cabling from the beginning to end of the bus
- Maximum 30 m (98 ft) VX001 cable can be used between two individual units
- Trip time is within $\pm 20\%$ tolerance limit on the I/O units, if the lowest measured supply voltage is above of +21.0 Vdc
 - When all the above conditions are met no external power supply cabling nor power supplies are needed

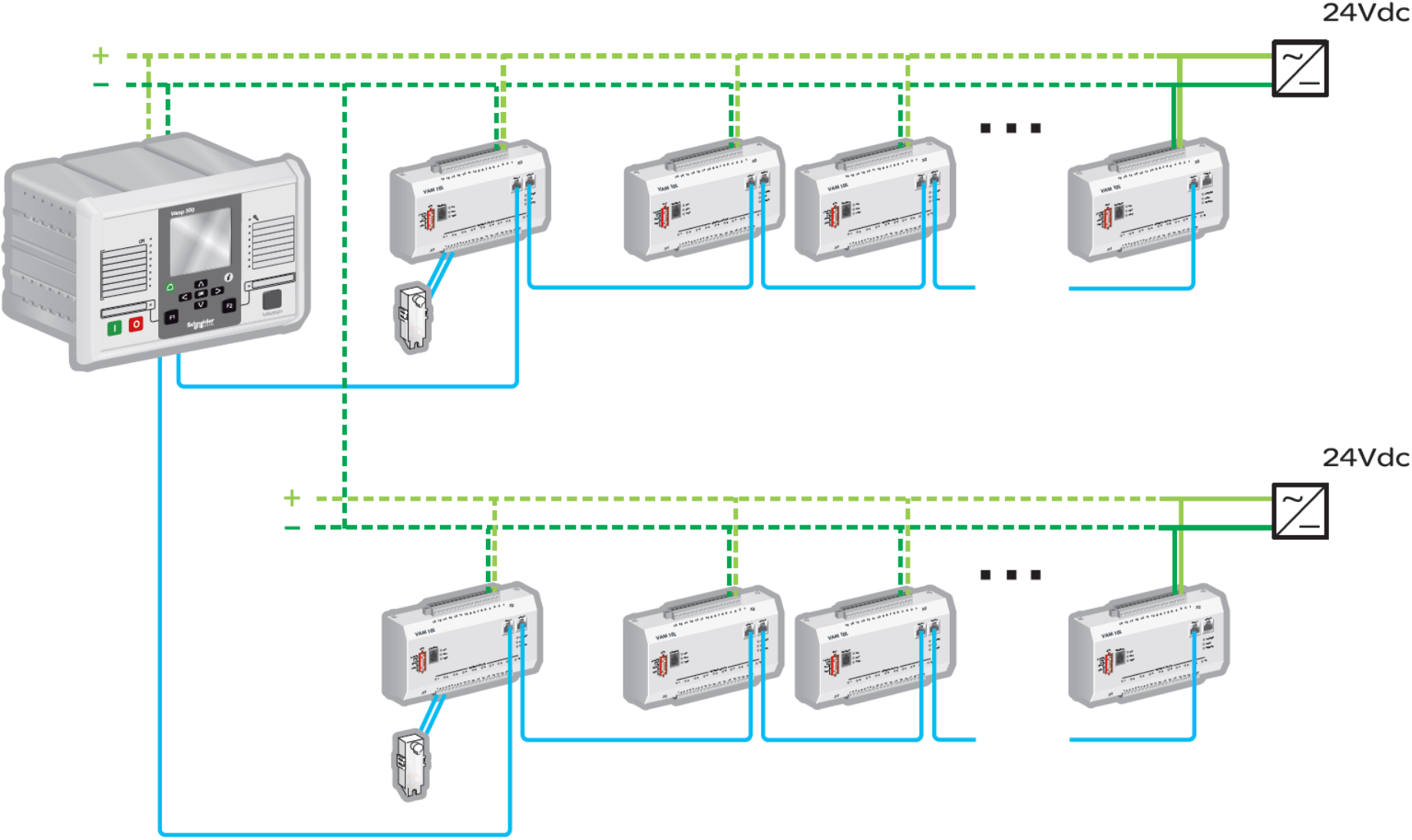
Large systems, single branch



Only one controller device, VAMP 221 or VAMP 321 with external supply units and supply cabling

- Maximum 16 I/O units with fully populated sensor inputs
- Maximum 100 m (328 ft) of VX001 cabling, including all cabling from the beginning to end of the bus
- Maximum 30 m (98 ft) VX001 cable can be used between two individual unit
- Trip time is within guaranteed limits when external supply unit is used. Nominal system operation voltage level is **+24 Vdc**.
- Minimum accepted operation voltage for the I/O unit is +21.0 Vdc
 - In case this condition is not met then use one more power supply

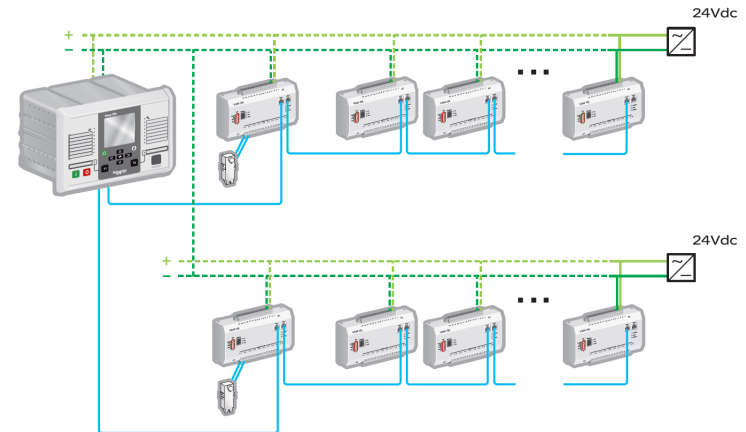
Large systems, two branches



Large systems, two branches

One or more controller devices, VAMP 221 or VAMP 321 with external supply units and supply cabling

- Maximally 16 I/O units with fully populated sensor inputs
- Maximally 100 m (328 ft) of VX001 cabling, including all cabling in both branches from the beginning to end of the bus
- Maximally 30 m (98 ft) VX001 cable can be used between two individual unit
- Trip time is within guaranteed limits when external supply unit is used. Nominal system operation voltage level is **+24 Vdc**
- Minimum accepted operation voltage for the I/O unit is +21.0 Vdc
 - In case this condition is not met then use one more power supply



External power supply wiring to units

- Use minimum of 1.5mm² (16 AWG) twisted pair cable
 - Wiring should be done in between every I/O-unit of the system including controller units (V321 / V221)
 - I/O units terminal X2 has U_{aux} input for external power supply connection
 - V321 unit has terminal in power supply card for external power supply connection
 - V221 unit has terminal in power supply card for external power supply

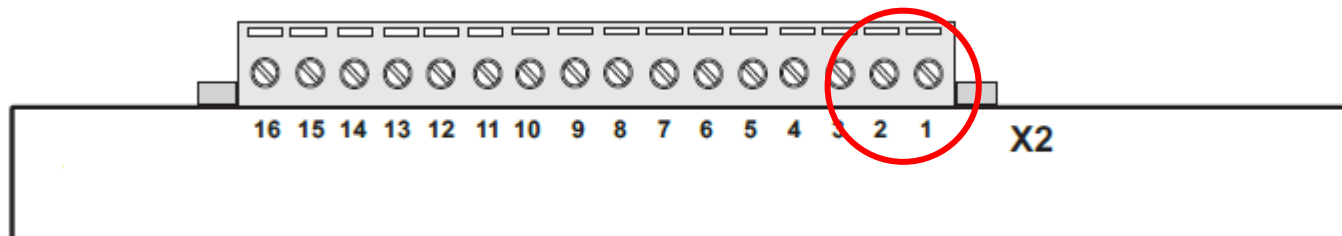
Slides 3. and 4. have a principle picture for supply wiring

External power supply wiring to units

Use minimally 1.5mm² (16 AWG) twisted pair cable

D-rail mounted I/O units terminal X2 is U_{aux} input for external power supply connection

- X2:1 +24 Vdc supply from external power supply or from controller unit
- X2:2 GND

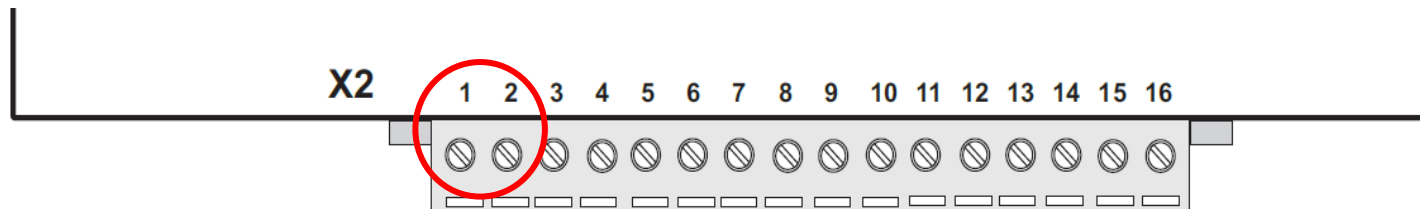


External power supply wiring to units

Use minimally 1.5mm² (16 AWG) twisted pair cable

Panel mounted I/O units terminal X2 is U_{aux} input for external power supply connection

- X2:1 +24 Vdc supply from external power supply or from controller unit
- X2:2 GND



External power supply wiring to units

V321 A-power

1/A/2:14: +24 Vdc

1/A/2:13: GND

V321 B-power

1/B/2:14: +24 Vdc

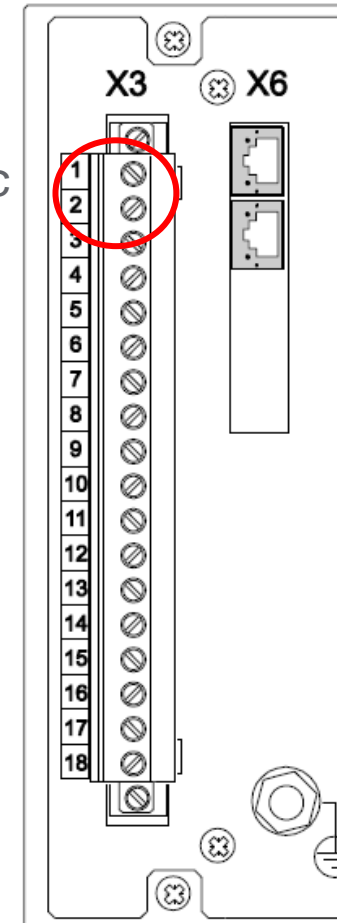
1/B/2:13: GND



V221

X3:1: GND

X3:2: +24 Vdc



Recommended types of power supplies

Schneider-Electric type

With voltage output monitoring

- ABL4RSM24035 (3.5A @ 24Vdc)
 - Input voltage 100...370 V DC
 - Input voltage 120...230 V AC single phase , terminal(s): N-L1
 - Input voltage 120...230 V AC phase to phase , terminal(s): L1-L2
- ABL4RSM24050 (5A @ 24Vdc)
 - Input voltage 100...370 V DC
 - Input voltage 120...230 V AC single phase , terminal(s): N-L1
 - Input voltage 120...230 V AC phase to phase , terminal(s): L1-L2
- or any equivalent type of power supply with above functionality

Phoenix Contact type

- With voltage output monitoring
- QUINT-PS/48DC/24DC/ 5 – 2320144 (5A @ 24Vdc)
 - Input voltage 30...60 V DC

Use of power supplies without voltage monitoring is not recommended

Thank you very much for your attention

Materials available:

<https://schneider-electric.box.com/s/35dZX74m8h6iehudl2yw>