1 | Overview

DS7428-CHI Bus Extender Module can extend using the DS7400 Series MUX Bus. It can accommodate long distance applications of the MUX Bus up to 5 km in a single loop. The DS7428-CHI requires a 12 VDC to the power supply. All MUX devices (including DS7457i, DS7432, DS3MX, and DS6MX) can connect directly to the DS7428-CHI bus.
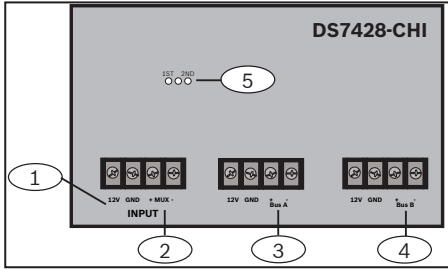

Figure 1.1: Module overview

Callout — Description
1 — External power source (12 VDC)
2 — DS7430/DS7436 MUX Bus Driver input
3 — MUX Bus output A
4 — MUX Bus output B
5 — Jumpers

1.1 | Compatible modules

Supported MUX Bus Modules includes DS7432, DS7457/DS7457i, DS7460/ DS7460i, DS7465/DS7465i,DS3MX/ DS3MX-CHI, DS6MX/DS6MX-CHI.

Refer to the DS7400Xi-CHI Installation Instructions for additional wiring information.

2 | Installation notes

These installation instructions assume the control panel is installed and in proper working condition.

⚠ **CAUTION!**
Failure to follow the installation instructions in this manual might result in damage to the control panel.

Disconnect the power to the DS7400 Series Control Panel before you run wires to connect the DS7428-CHI.

Install the DS7428-CHI in an enclosure and in dry conditions.

- Use only non-shielded and non-twisted cable (1.0 mm^2 or above) for the wiring in the MUX Bus (including the Extend Distance Bus).
- Without the DS7428-CHI, the longest distance of the MUX Bus is 1.5 km.
- A single loop MUX Bus can reach 5 km after installed with DS7428-CHI.
- The wiring distance between the first-level DS7428-CHI and the DS7400Xi-CHI Control Panel should be less than 1 m. The first-level DS7428-CHI can support Bus diastance for 3.5km.
- When the second-level DS7428-CHI is installed, it can extend an additional 1.5 km. The total distance can reach 5 km of two levels of DS7428-CHI.
- In each DS7400Xi system when using a DS7430 MUX Bus Driver, you can only install maximum three pieces of DS7428-CHI. In addition, you can install maximum six pieces of DS7428-CHI when you use DS7436 MUX Bus Driver.
- The first-level DS7428-CHI should be installed as close as to the DS7430/ DS7436 module, and connect the input power. Use an independent power source to support the remote second-level DS7428-CHI (refer to *Figure 3.1* and *Figure 3.2*).

- Try to avoid running wires dispersedly. DS7428-CHI has an isolation feature. When the DS7428-CHI detects the MUX bus fault, it isolates the loop.
- Avoid connecting DS7428-CHI in parallel. Using one first-level DS7428-CHI can improve the reliability of system.
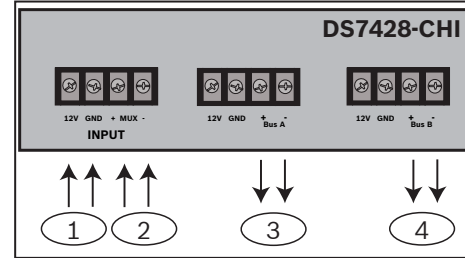
3 | Wiring diagrams

Figure 3.1: First-level connection wiring

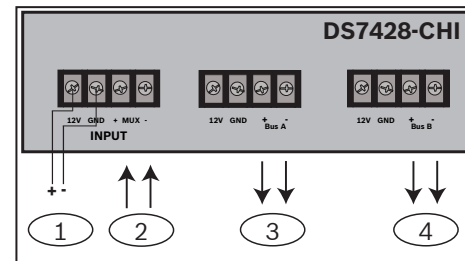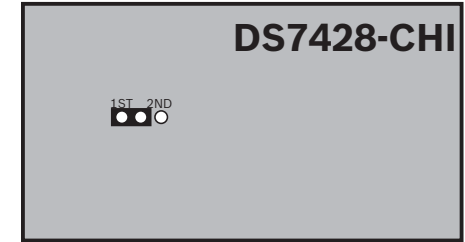| Callout — Description |
|---|
| 1 — DS7400Xi power supply input |
| 2 — Bus Driver Input for DS7430 or DS7436 MUX Bus Driver |
| 3 — MUX Bus output A |
| 4 — MUX Bus output B |

Figure 3.2: Second-level connection wiring

Callout — Description
1 — External power source
2 — Bus Driver Input from first-level DS7428-CHI MUX Bus output A or B
3 — MUX Bus output A
4 — MUX Bus output B

4 | Wire jumper instructions

When using the DS7428-CHI in a first level connection, place the single loop bus jumper wire to the "1ST" position at P2.

Figure 4.1: First-level connection wiring

When using the DS7428-CHI in a second level connection, place the single loop bus jumper wire to "2ND" at P2.
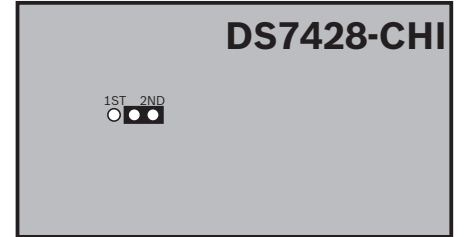

Figure 4.2: Second-level connection wiring

5 | System Overview with DS7430
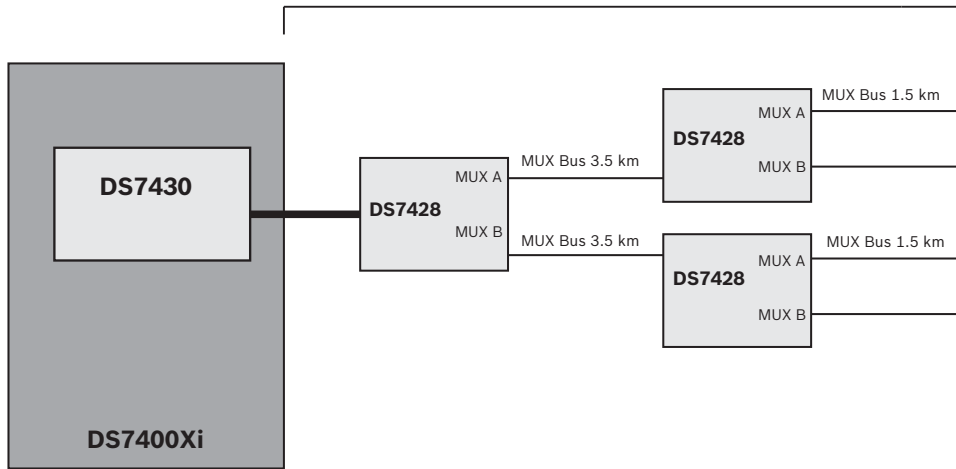
Each loop Bus not more than 5 km *

Figure 5.1: System overview with DS7430

6 | Configuration with DS7436 MUX Bus Driver Module
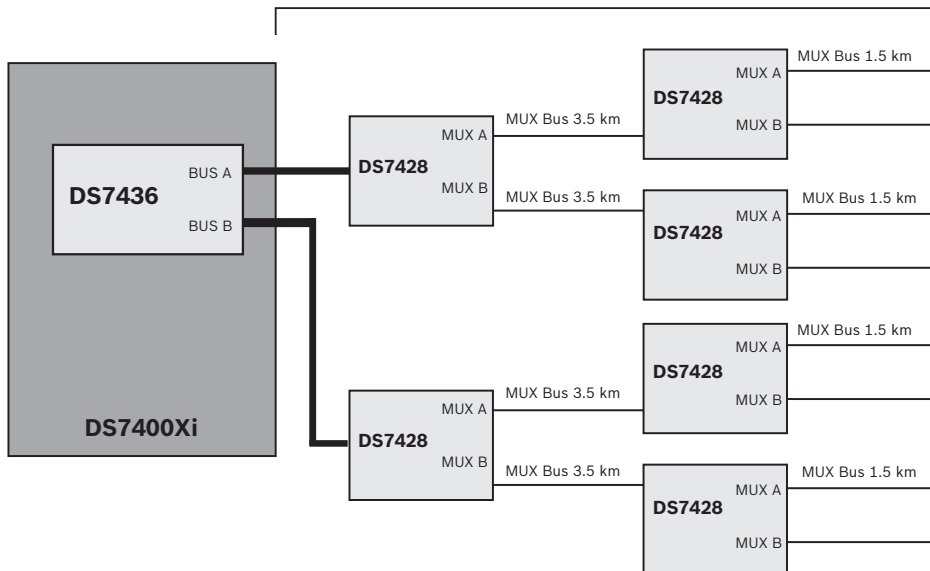
Each loop Bus not more than 5 km *

Figure 6.1: System overview with DS7436

⚠ **CAUTION!**
* Total wire length per loop should not exceed 5 km.

7 | Specifications

Dimensions	146 mm x 89 mm
Voltage (operating)	12 VDC nominal (10-13.2 VDC)
Current (maximum)	120 mA
Operating temperature	-40° C to +65° C
Relative humidity	0% to 99%
MUX Bus Connection Request	1.0 mm^2 above
MUX Bus	5 km (longest distance)
Compat-ibility	DS7400 Series Control Panels

Bus Extender Module
DS7428-CHI

BOSCH

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