

Flexible
Compact
Robust

cSCALE DIO



cSCALE DIO

The cSCALE DIO (= distributed I/O) is a versatile, extremely robust I/O module for local capture of analog and digital sensor signals via a CANbus connection. This I/O module is ideal for controlling actuators and proportional valves in CANopen bus systems.

↗ Compatible and user-friendly

The cSCALE DIO can be placed right where the signals originate making it very easy to install with minimal wiring. This greatly reduces the required number of connections.

The cSCALE DIO uses the CANopen protocol to communicate with stored-program controllers but is very compatible with many types of controllers.

↗ Configurable inputs and outputs

The cSCALE DIO uses the standard CANopen protocol and can be connected to any CANopen master. It supports both binary and analog inputs and outputs.

Users will benefit from the flexible configuration of inputs and outputs. This allows for a variety of solutions and permits the module to be used in a wide range of applications.

The following functions are possible:

- Digital inputs, also with short circuit and wire break detection
- Digital counter inputs with frequency measurement
- Analog power inputs or voltage inputs
- Digital outputs
- Constant-current PWM outputs

↗ Using cSCALE DIO

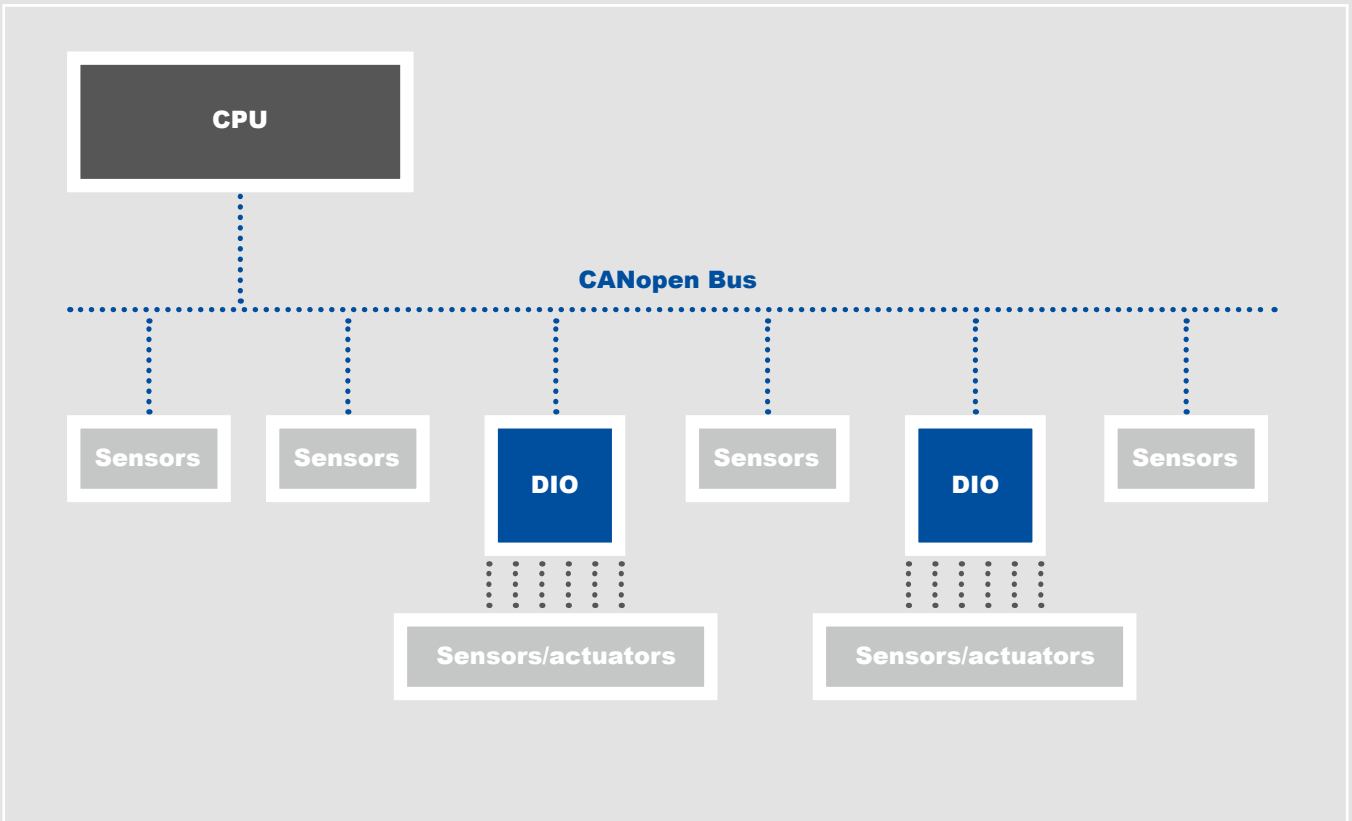
The cSCALE DIO is ideal when large distances need to be connected between the controller and sensors and/or actuators via CANopen. The CANbus connection is fast and easy and gives the user the flexibility to place the DIO where it's needed. Sensors and actuators are connected via the DIO, which communicates with the controller via the CANbus.

The DIO is compatible with all controllers, including the cSCALE and qSCALE lx, for example when detecting and controlling I/Os in a crane's base (with the CAN signal being transmitted via the slip rings) or outrigger.

Below are a few examples of the items that can be directly connected:

- Sensors
- Hydraulic valves
- Joysticks
- Horns
- Warning lights and signal lamps
- Remote controllers





Technical Data

- **Protection ratings:**

IP66 and IP67

- **Ambient temperature:**

-40...+85 °C (surface temperature)

- **Temperature range:**

-40...+70 °C/-40...+158 °F (operation)

-40...+85 °C/-40...+185 °F (storage)

- **Interfaces:**

1 CANopen

- **Article no.:**

cSCALE DX-66-AM0: 608785

- **Inputs & outputs:**

- 8 x AI (4...20 mA)
- 10 x DI (up to 4 configurable as DI HSC)
- 2 x DI DIAG (diagnosable)
- 4 x DO (1A)
- 4 x DO CC PWM (2A)

- **Operating voltage:**

6...36 V DC

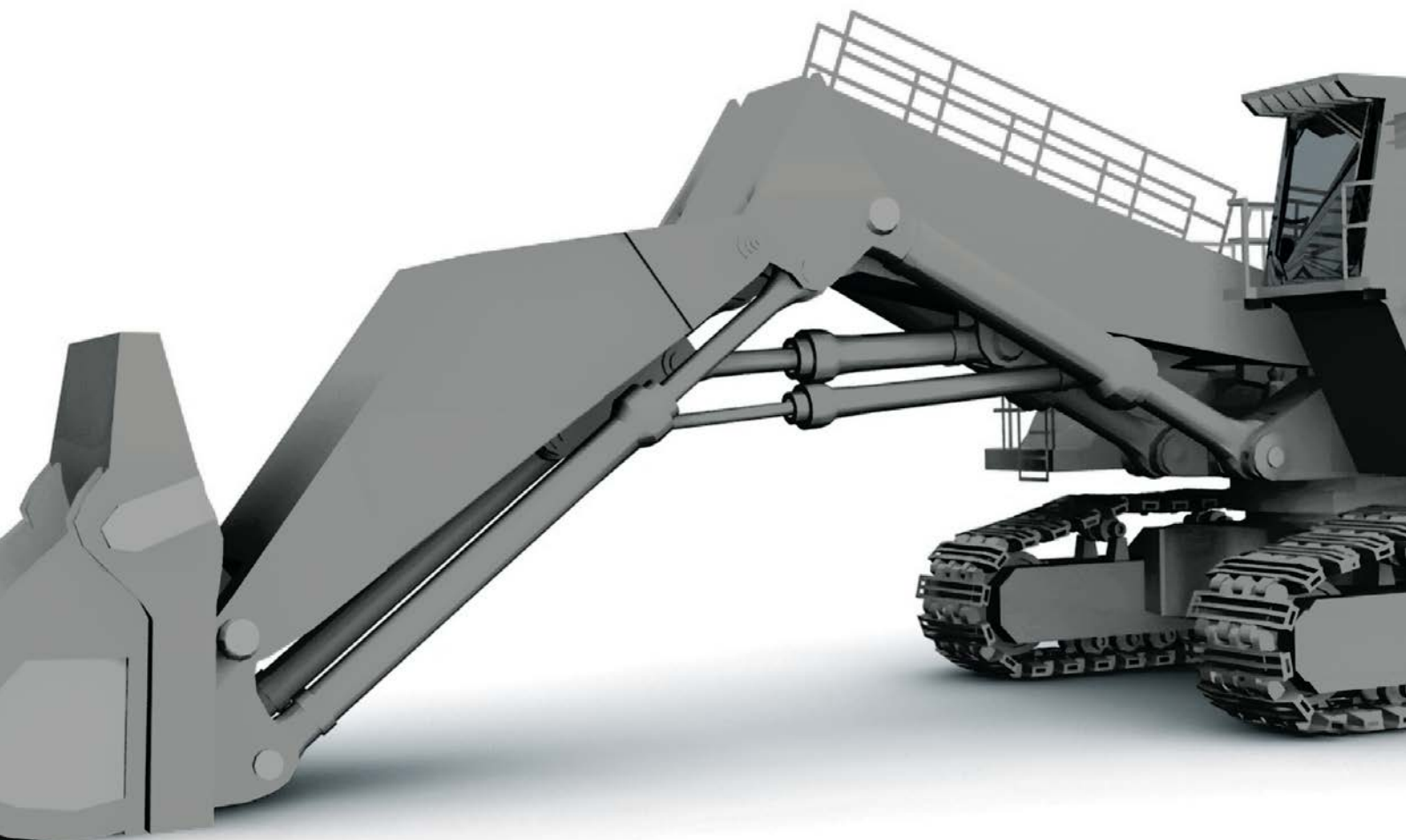
- **Software:**

Configuration via EDS with CODESYS
Version 2.3 or higher

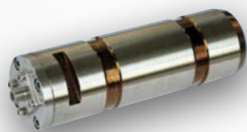


➤ I/O and Modularity

- 28 I/Os or rather 56 I/Os integrated in a single module
 - 10 digital inputs, four of them configurable as high-speed counters (HSCs)
 - 2 DI DIAG: diagnostics-capable digital inputs, optionally with detection of cable breaks or short circuits
 - 8 analog current inputs with 4-20 mA or voltage inputs with 0...10 V
 - 4 digital constant-current PWM outputs
 - 1 relay output
- Possibility of combining multiple DIO modules in a control system
 - Cost-effective solution for increasing the number of inputs and outputs in mobile equipment
 - Good price/performance due to high I/O packing density



pSENS **DAVC**



fSENS **MA**



gSENS **DWG**



gSENS **WGX**

➤ CAN Communication

The standardized CANopen protocol makes it easier to network different kinds of devices via a CANopen bus. All CAN interfaces use the CANopen protocol. Multiple local analog and/or digital signals are bundled and relayed as CAN signals.

The cSCALE DIO supports the standard CANopen and CANopen Safety protocols.

Sensors, actuators, and power sources are interconnected via a single standardized connector.

➤ EDS Files

For easy editing with CODESYS, the complete device descriptions are contained in CiA (CAN in Automation)-compliant EDS files.

➤ Safety and Power Supply

The cSCALE DIO receives its power via a central connector.

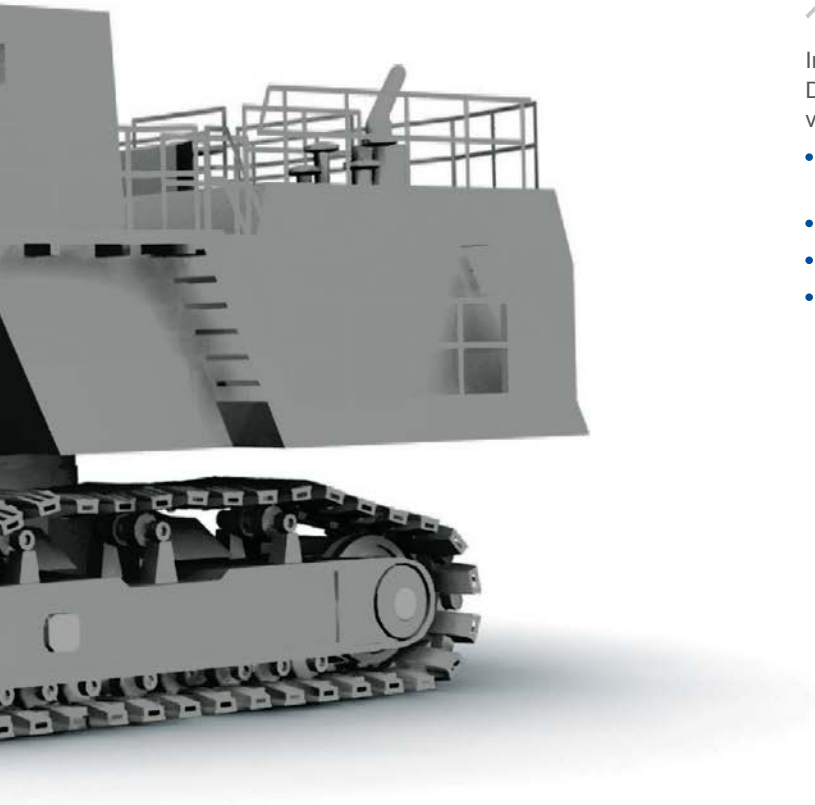
The cSCALE DIO has two integrated cutout relays connected in series for emergency shutdown.

The permissible voltage range is from 6 to 36 V DC.

➤ Robust and Compact

In addition to boasting a very compact housing, the cSCALE DIO is very robust and features enhanced resistance to vibrations and jolts. This is ideal for use in harsh environments.

- The cSCALE DIO and corresponding plug connectors comply with protection ratings IP66 and 67
- Housing: robust, compact, and suitable for harsh environments
- Vibration- and shock-resistant
- May be installed on a suitable external surface or in a switch cabinet



➤ Programming

The device functions and CAN interface of the cSCALE DIO can be programmed by using a CODESYS 2.3 or CODESYS 3.x controller environment editor or other CAN configuration software to edit the EDS file.

- Setting of device parameters via an object directory
- Exchange of time-critical process data of sensors and actuators
- Monitoring of devices and networks
- Display of hardware and software fault states
- Programmable I/O functions

➤ All Benefits at a Glance

- CANopen/CANopen Safety
- Voltage range: 6 to 36 V DC
- Very flexible configuration of the inputs and outputs for a wide range of applications
- Digital and analog inputs
- Very compact and dense: 28 I/Os (56 I/Os) integrated in a single module
- IP66/67 protection ratings make it ideal for use in rough conditions.
- Cutout relay

Worldwide



We make lifting loads safer!

As an experienced specialist, we have spent many years providing reliable safety solutions for lifting loads, setting innovative standards in the process and ensuring dependable communication between machines and their operators, particularly in harsh environments.

By developing application software, mobile controllers and robust sensors, we ensure that our customers benefit from maximum safety and equipment uptime.

We are system integrators, supporting our customers through all project phases: from

analysis and concept evaluation, through system design and project planning to prototype testing and field launches. Our safety experts support certification processes and are available for seamless life cycle management.

WIKA Mobile Control GmbH & Co. KG

Hertzstr. 32-34
76275 Ettlingen, Germany
Phone: +49 (0) 7243 709-0
sales.wmc@wika.com
www.wika-mc.com

USA WIKA Mobile Control LP

1540 Orchard Drive
Chambersburg, PA 17201
Phone: +1 717 263 7655
sales.us.wmc@wika.com
www.wika-mc.com/en

China Xuzhou WIKA Electronics Control Technology Co. Ltd.

No.11 Baoliensi Road,
Xuzhou Economic Development Zone
Xuzhou, JiangSu, 221001
Phone: +86 (0) 516 8788 5799
info@wika-mc.cn
www.wika-mc.cn

**Check out our global
partner network online:
www.wika-mc.com**

**WE MAKE LIFTING
LOADS SAFER** 