

Digital Input/Output Modules DC522 and DC523

- DC522: 16 configurable digital inputs/outputs
- DC523: 24 configurable digital inputs/outputs
- module-wise electrically isolated

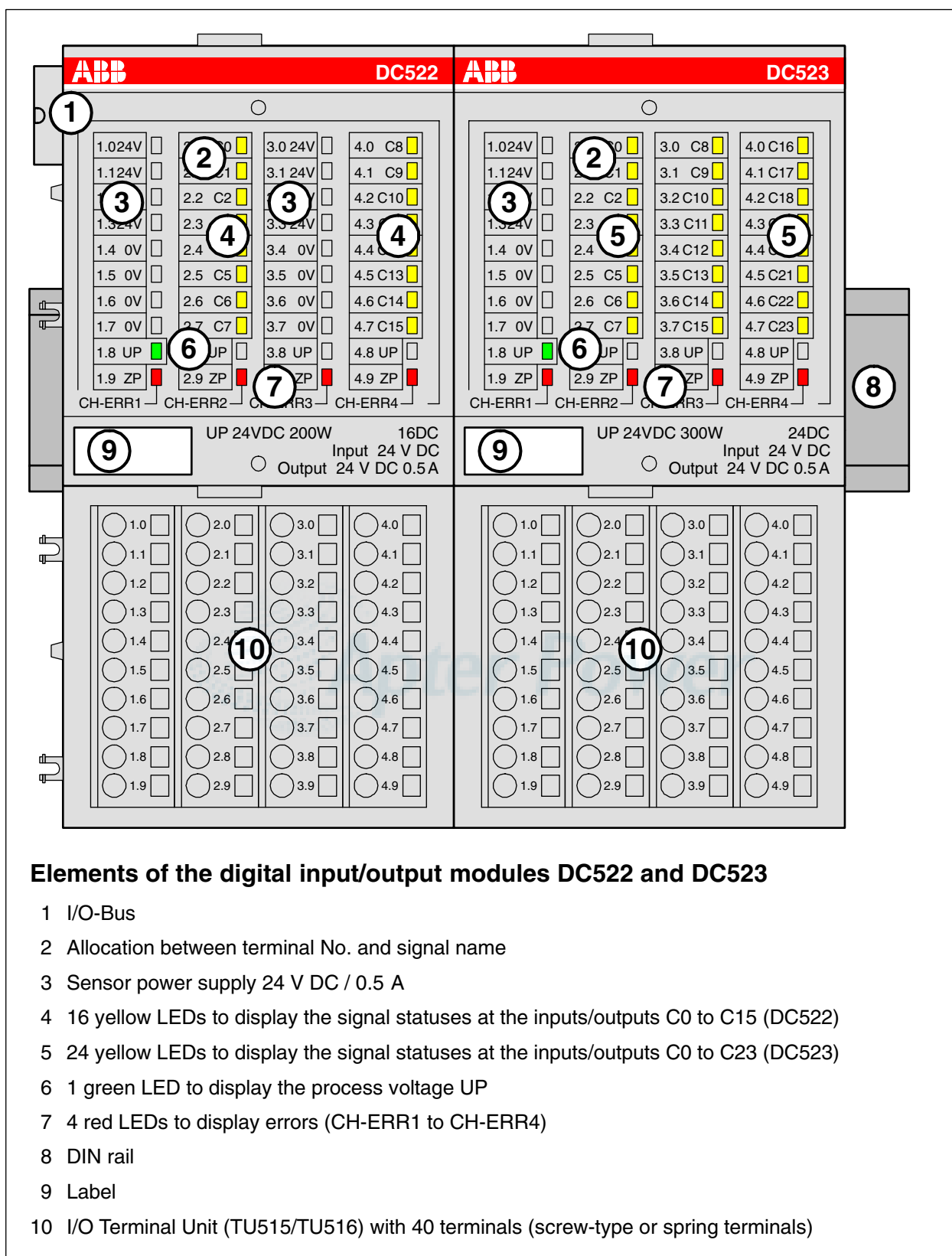


Figure: Digital input/output modules DC522 and DC523, plugged on Terminal Units TU516

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Intended purpose

The digital input/output modules DC522 and DC523 can be used as remote expansion modules at the FBP Interface Module DC505-FBP, at the CS31 Bus Module DC551-CS31 or locally at an AC500 CPU. They contain 16 or 24 channels with the following features:

DC522:

- Two 24 V DC 0.5 A sensor power supplies with short-circuit and overload protection
- 16 digital inputs/outputs 24 V DC in one group (2.0...2.7 and 4.0...4.7), of which each can be used
 - as an input,
 - as a transistor output with short-circuit and overload protection, 0.5 A rated current or
 - as a re-readable output (combined input/output) with the technical data of the digital inputs and outputs.

DC523:

- One 24 V DC 0.5 A sensor power supply with short-circuit and overload protection
- 24 digital inputs/outputs 24 V DC in one group (2.0...4.7), of which each can be used
 - as an input,
 - as a transistor output with short-circuit and overload protection, 0.5 A rated current or
 - as a re-readable output (combined input/output) with the technical data of the digital inputs and outputs.

The inputs/outputs are electrically isolated from the other electronic circuitry of the module. There is no potential separation between the channels.

Functionality

Digital inputs/outputs	DC522: 16 (24 V DC)
Digital inputs/outputs	DC523: 24 (24 V DC)
High-speed counter	integrated, many configurable operating modes (only with AC500)
LED displays	for signal statuses, errors and supply voltage
Internal power supply	through the expansion bus interface (I/O-Bus)
External power supply	via the terminals ZP and UP (process voltage 24 V DC)

Electrical connection

The input/output modules are plugged on I/O Terminal Units TU515 or TU516. Properly seat the modules and press until they lock in place. The Terminal Units are mounted on a DIN rail or with 2 screws plus the additional accessory for wall mounting (TA526).

The electrical connection of the I/O channels is carried out using the 40 terminals of the I/O Terminal Unit. I/O modules can be replaced without re-wiring the Terminal Units.



Note: Mounting, disassembling and electrical connection for the Terminal Units and the I/O modules are described in detail in the S500 system data chapters.

The terminals 1.8 to 4.8 and 1.9 to 4.9 are electrically interconnected within the I/O Terminal Unit and have always the same assignment, independent of the inserted module:

Terminals 1.8 to 4.8: Process voltage UP = +24 V DC

Terminals 1.9 to 4.9: Process voltage ZP = 0 V

The assignment of the other terminals:

DC522:

Terminals	Signal	Meaning
1.0 to 1.3	+24 V	4 x sensor power supply sources (loadable with 0.5 A in total)
1.4 to 1.7	0 V	0 V (reference potential)
2.0 to 2.7	C0 to C7	8 digital inputs/outputs
3.0 to 3.3	+24 V	4 x sensor power supply sources (loadable with 0.5 A in total)
3.4 to 3.7	0 V	0 V (reference potential)
4.0 to 4.7	C8 to C15	8 digital inputs/outputs

DC523:

Terminals	Signal	Meaning
1.0 to 1.3	+24 V	4 x sensor power supply sources (loadable with 0.5 A in total)
1.4 to 1.7	0 V	0 V (reference potential)
2.0 to 2.7	C0 to C7	8 digital inputs/outputs
3.0 to 3.7	C8 to C15	8 digital inputs/outputs
4.0 to 4.7	C16 to C23	8 digital inputs/outputs

The supply voltage 24 V DC for the module's electronic circuitry comes from the I/O-Bus of the FieldBusPlug or the CPU.



Caution: Removal of energized modules is not permitted. All power sources (supply and process voltages) must be switched off while working on any AC500 system.

The modules provide several diagnosis functions (see chapter "Diagnosis and display").

The following figure shows the electrical connection of the digital input/output module **DC523**.

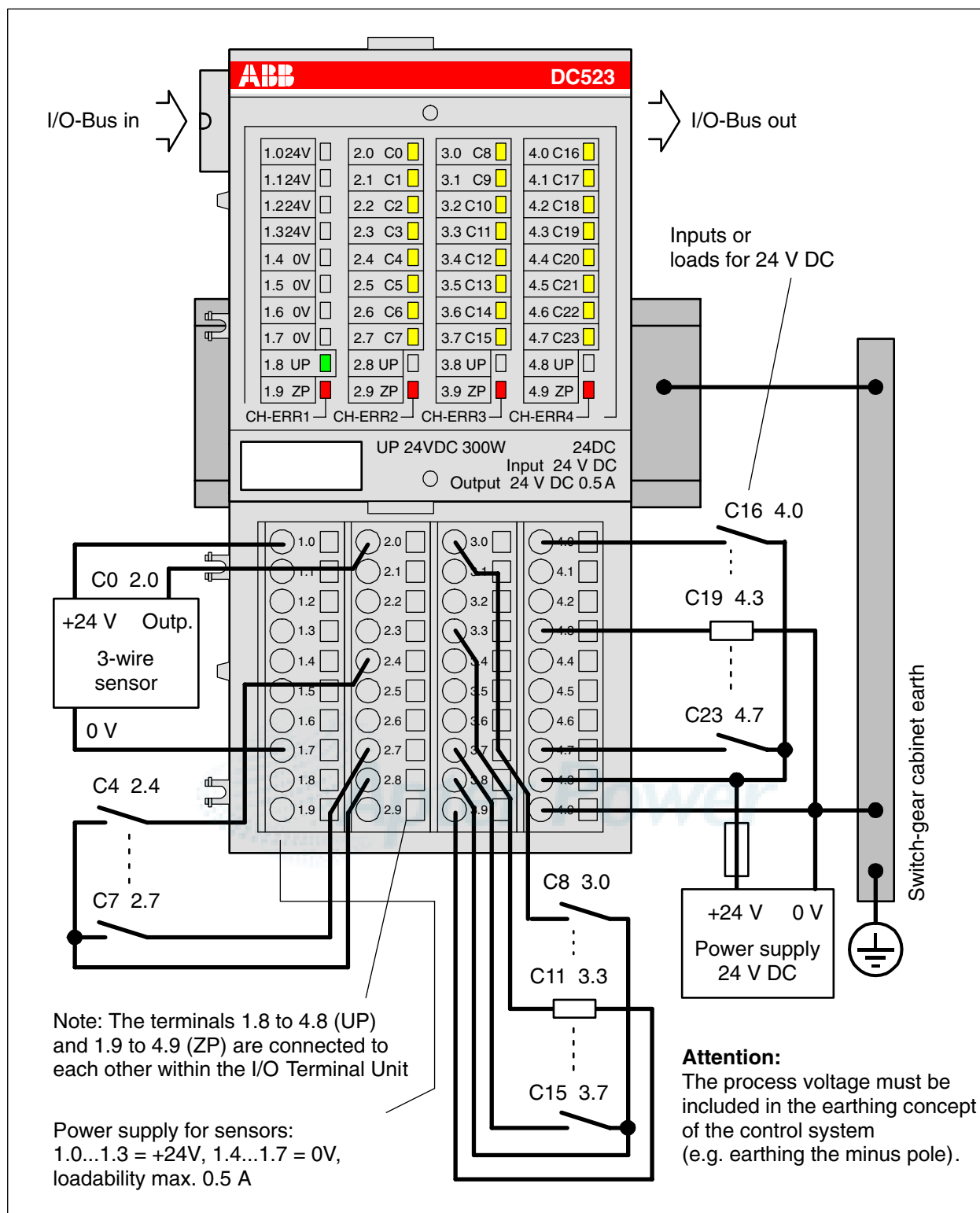


Figure: Electrical connection of the digital input/output module DC523

Internal data exchange

DC522:

	without the high-speed counter	with the high-speed counter (only with AC500)
Digital inputs (bytes)	2	4
Digital outputs (bytes)	2	4
Counter input data (words)	0	4
Counter output data (words)	0	8

DC523:

	without the high-speed counter	with the high-speed counter (only with AC500)
Digital inputs (bytes)	3	5
Digital outputs (bytes)	3	5
Counter input data (words)	0	4
Counter output data (words)	0	8

I/O configuration

The modules DC522 and DC523 do not store configuration data themselves. The configurable channels are defined as inputs or outputs by the user program, i.e. each of the configurable channels can be used as input or output (or re-readable output) by interrogation or allocation by the user program.



Technical data of the high-speed counter



Attention: The high-speed counter of the module can only be used together with the AC500 CPU. The counter does not work, if the module is attached to an FBP Interface Module or a CS31 Bus Module.

Used inputs	DC522: C8 / C9 DC523: C16 / C17
Used outputs	DC522: C10 DC523: C18
Counting frequency	max. 50 kHz
Detailed description	see chapter "High-speed counter"
Operating modes	see chapter "High-speed counter, Operating modes"

Ordering data

Order No.	Scope of delivery
1SAP 240 600 R0001	DC522, Digital input/output module, 16 DC, 24 V DC / 0.5 A, 2-wire
1SAP 240 500 R0001	DC523, Digital input/output module, 24 DC, 24 V DC / 0.5 A, 1-wire
1SAP 212 200 R0001	TU515, I/O Terminal Unit, 24 V DC, screw-type terminals
1SAP 212 000 R0001	TU516, I/O Terminal Unit, 24 V DC, spring terminals

