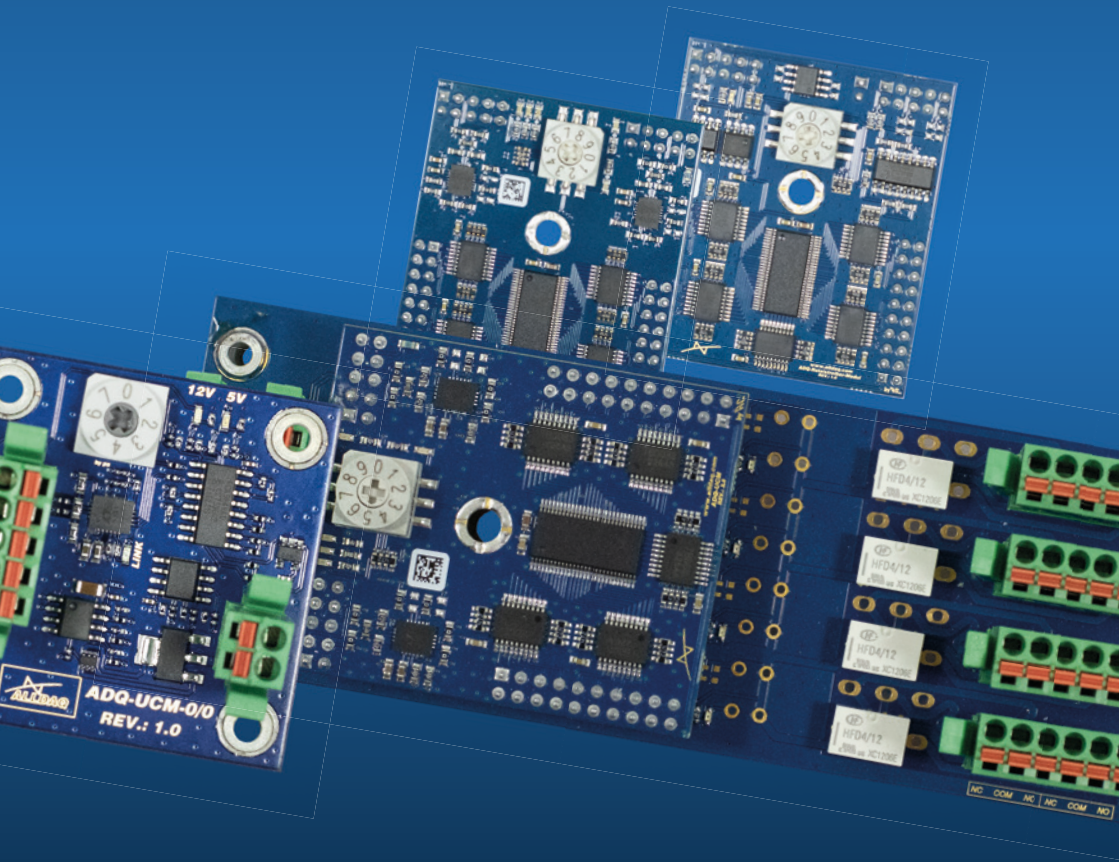
ALLDAQ

Competence in Measurement

ADQ-UCM (Universal Control Module) series

Rev. 1.0 DE



Imprint

Manual ADQ-UCM (Universal Control Module) series Rev. 1.0

Manufacturer and support
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1. Introduction

Please check the packaging and contents for damage and completeness before commissioning. If there are any defects, please inform us immediately.

- Does the packaging indicate that something was damaged during transportation?
- Are there any signs of use on the device?

Under no circumstances should you operate the appliance if it is damaged. If in doubt, please contact our technical customer service.

Please read this manual carefully before installing the device!

1.1 Scope of delivery (depending on module)

- ALLDAQ ADQ-UCM 0/0 | Art.-Nr. 200864
- ALLDAQ ADQ-UCM 40/0 Rev. 1.0 | Art.-Nr. 162913
- ALLDAQ ADQ-UCM 24/16 Rev. 1.0 | Art.-Nr. XXXXX
- ALLDAQ ADQ-UCM 40/0 Rev. 2.0 | Art.-Nr. 214812
- ALLDAQ ADQ-UCM 24/16 Rev. 2.0 | Art.-Nr. XXXXX
- ALLDAQ ADQ-UCM EXT/1 | Art.-Nr. XXXXX

1.2 Safety instructions

Please observe the following instructions:

- Avoid touching cables and connectors
- Never expose the device to direct sunlight during operation.
- Never operate the device near heat sources.
- Protect the device from moisture, dust, liquids and vapors.
- Do not use the device in damp rooms or in potentially explosive atmospheres.
- Repairs may only be carried out by trained, authorized personnel.
- Please observe the installation regulations and all relevant standards (including VDE standards) when commissioning the device, especially when operating with voltages greater than 42 V.
- We recommend that unused inputs are always connected to the corresponding reference ground in order to avoid crosstalk between the input channels.
- Always disconnect your field wiring from the power source before making or breaking cable connections with the card.
- Ensure that no static discharge can occur via the device when handling the board. Follow the standard ESD protection measures.
- Never connect the devices to live parts, especially not to mains voltage.
- Precautionary measures to prevent unforeseeable misuse must be taken by the user.

ALLNET® GmbH Computersysteme accepts no liability for improper use and the resulting damage.

1.3 Installation and mounting location

The ADQ-UCM are intended for installation in measuring and test systems by qualified specialist personnel. The relevant installation regulations and standards must be observed.

The ADQ-UCM may only be used in dry rooms. Ensure sufficient heat dissipation. Ensure that the connection cables are securely fastened. The installation must be carried out in such a way that the cables are not under tension, as otherwise they could come loose.

Please also ensure that the cables are not kinked or laid in excessively tight bending radii. If cable ties or similar are used to secure the cables, they must not be tightened too much to avoid internal short circuits in the cable.
We cannot accept any liability for damage and failures that occur as a result.

1.4 System requirements

Hardware

- PC system with a current Intel® or compatible processor based on x86(-64) architecture
- Optional ALLDAQ driver

Software

On the ALLDAQ homepage you will find drivers for Windows 11/10/8.1/8/7 (64 bit, 32 bit on request) as well as a function library (API) with code examples for high-level language programming.

Please refer to the notes in the associated help file adqSDK.chm. Details on programming can also be found in the help file adqDriver.chm, which you can call up via the "ALLDAQ Manager" in the info area of the taskbar (usually at the bottom right) or the Windows Start menu.

1.5 Function matrix of the various modules

Module type	Interface IN	Interface OUT	I/O-Typ: DI	I/O-Typ: DO	Temp. sensor (alarm output)	Fan control	Up/down counter	ID-Chip
ADQ-UCM 0/0	ADQ-Link	-	-	-	✓	-	✓	✓
ADQ-UCM 40/0 Rev. 1.0	I2C-TTL	I2C-TTL	-	✓	✓	✓	✓	-
ADQ-UCM 24/16 Rev. 1.0	I2C-TTL	I2C-TTL	✓	✓	✓	✓	✓	-
ADQ-UCM 40/0 Rev. 2.0	ADQ-Link	ADQ-Link I2C-TTL	-	✓	✓	✓	✓	✓
ADQ-UCM 24/16 Rev. 2.0	ADQ-Link	ADQ-Link I2C-TTL	✓	✓	✓	✓	✓	✓

Module type	Interface IN	Interface OUT	I/O-Typ: DI	I/O-Typ: DO	I/O-Typ: Relais	Temp. sensor (alarm output)	Fan control	Up/down counter	ID-Chip
ADQ-UCM EXT/1	ADQ-Link	ADQ-Link	-	-	✓	✓	✓	✓	✓

1.5.1 Short description of the functions

Functions	Description
Interface	The module is controlled via the interface. A distinction is made between ADQ-Link or I2C-TTL as the BUS type.
I/O-Typ	Indicates which INPUT/OUTPUT functions are available.
Temp. sensor (alarm output)	Temperature monitoring with threshold value setting and alarm output (see module specifications)
Fan control only for ADQ-UCM 0/0	Type: Open collector negative pole for a DC fan (see specifications on page 15)
Up/down counter	Software counter with detailed API functions (Up, Down, Reset)
ID-Chip	Provides a unique 48-bit ID for e.g. device coding (readable via software)

2. ADQ-UCM 0/0

2.1 Short description

The ADQ-UCM 0/0 was developed for use in industrial automation and provides, among other things, a unique 48-bit ID. The ADQ-UCM 0/0 is controlled via the ADQ-Link-BUS.

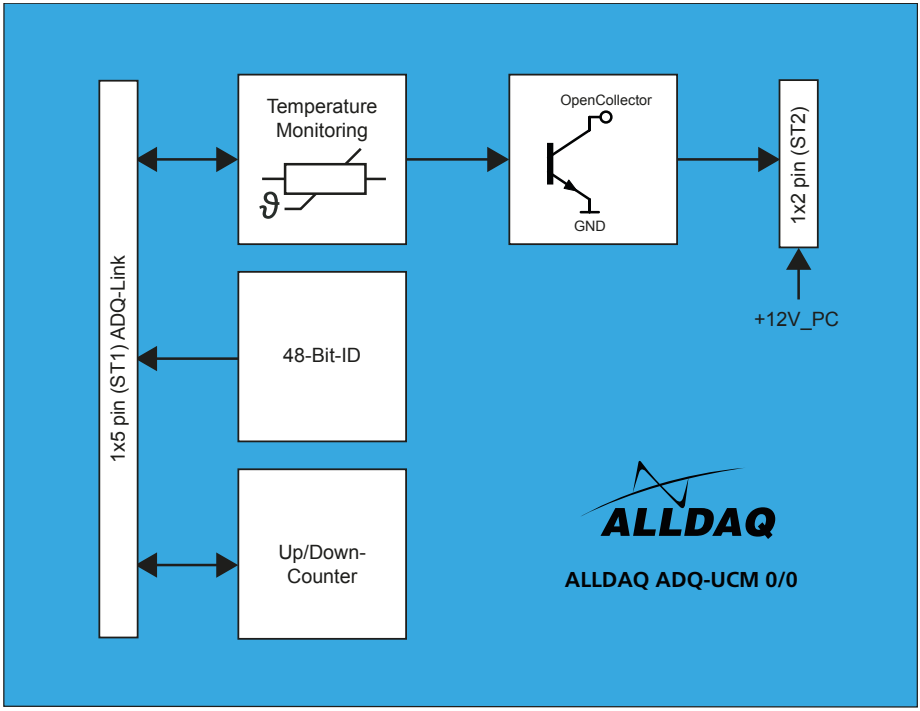
Important features:

- Provides a unique 48-bit ID for e.g. coding of devices (readable via software)
- Temperature monitoring with threshold setting and alarm output
- Software counter with detailed API functions (Up, Down, Reset)
- Status displays for power, ADQ link
- Can also be used as a stand-alone device (simple control via ADQ-153)
- API for easy integration into your application
- Simple control via the ALLDAQ driver system
- Simple control via ADQ-Link

Typical area of application:

This module can be used to assign a unique identification ID to an assembly worldwide.

2.2 Block diagram ADQ-UCM 0/0



2.3 Power supply

The complete module is supplied via connector ST1 (5VDC, 12VDC, GND).

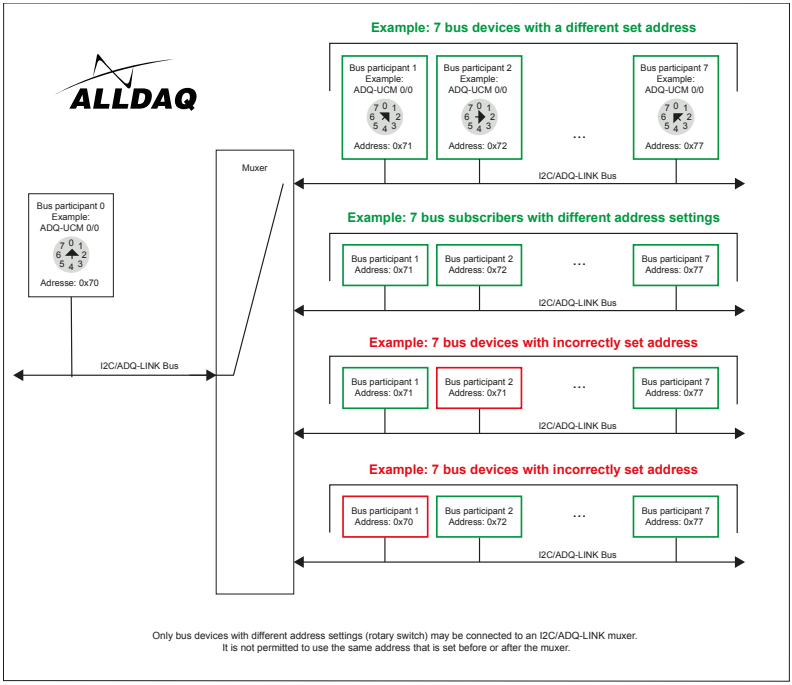
2.4 Control system

An ADQ-Link host is always used to fully control the ADQ-UCM 0/0 (e.g. ADQ-153, ADQ-SCU-BB).

2.5 Rotary switch

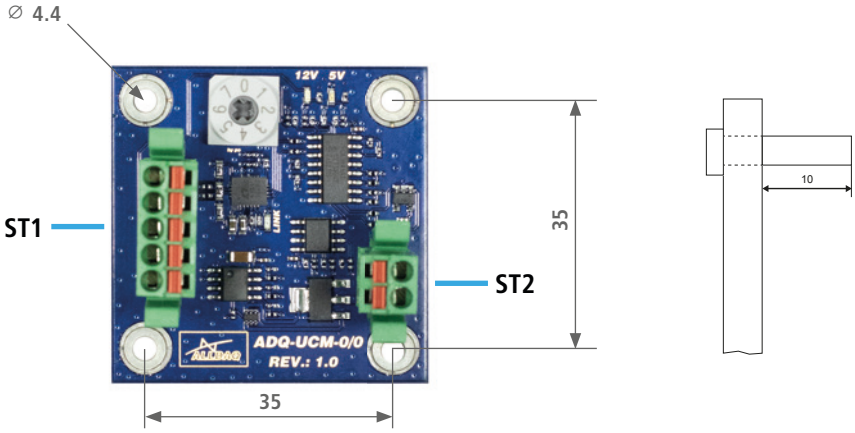
Use the rotary switch to determine the main address of the ADQ-UCM 0/0 module. The address may only occur once on an ADQ link. This also applies to other peripherals. All ADQ-UCMs have an adjustable rotary switch.

Position	Adress (7 bit)
0	0x70
1	0x71
2	0x72
3	0x73
4	0x74
5	0x75
6	0x76
7	0x77



2.6 Pin assignment

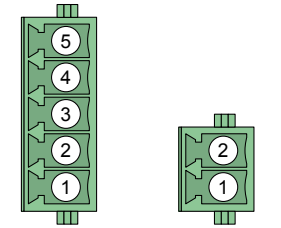
2.6.1 Position of the plug connectors



2.7 Connector types

2.7.1 Type Würth

Connectors from the Therma/Würth 69130513.... series with various numbers of poles are used are used.



5-pin
(691305130005)

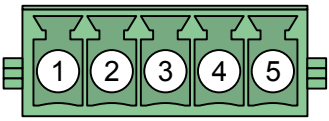
2-pin
(691305130002)

2.8 Pin assignment

2.8.1 ST1

This connector can be used to control the ADQ-UCM 0/0 via the ADQ-Link.
ADQ-Link-IN (point to point): ST1

- Overvoltage protection of cables up to ± 60 V / ADQ devices can be set down up to 100 m (twisted pair)
- IEC Level 4 ESD ± 8 kV and EFT ± 5 kV
- Status LED (yellow) when connection to a remote device is present

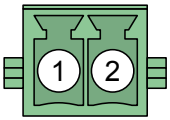


Würth 5-pin (691305130005)
Mating connector (691305130005)

Pin	ST1	Note
1	+ADQ-LINK	Differential BUS
2	GND_PC	PC ground
3	+5V_PC	PC power supply unit
4	-ADQ-LINK	Differential BUS
5	+12V_PC	PC power supply unit

Note: Route the ADQ link via a simple twisted pair cable (unshielded).

2.8.2 ST2



Würth 5-pin (691305130002)
Mating connector (691305130002)

Pin	ST2	Note
1	+12V_PC	12V supply for external fan via ST1
2	GND	SINK-Output

2.9 Specifications ADQ-UCM 0/0

Conditions: TA = 25°C unless otherwise specified; warm-up time: 30 minutes.

Element	Condition	Specification
Control and signal processing	recommended	ADQ-UCM 0/0 for digital output (alarm) and control via ADQ-Link
Supply		Supply via ST1: 12 V/5V supply (±10%) via Würth plug connector
Quiescent current consumption	Without alarm	12 V: max. TBD A/5V: max. TBD A
SINK output Alarm output	U_{max} = 12VDC Low output Voltage: 0,7V	I_{max} = 200mA
Temperature range	Operating	0..60 °C (standard)
Air humidity	Operating	20%..55% (non-condensing)
Dimensions (W x D x H)	ADQ-UCM 0/0	45 x 45 x 40 mm
Mounting type	ADQ-UCM 0/0	screwable
Manufacturer warranty		36 months

3. ADQ-UCM 40/0 Rev. 1.0

3.1 Short description

The ADQ-UCM 40/0 was developed for use in industrial automation and has 40 switchable outputs (SINK), as well as temperature monitoring with threshold value setting including alarm output (5V TTL). The ADQ-UCM 40/0 is controlled via the I2C-BUS (TTL). The module also offers 3 additional I2C-BUS interfaces (host TTL).

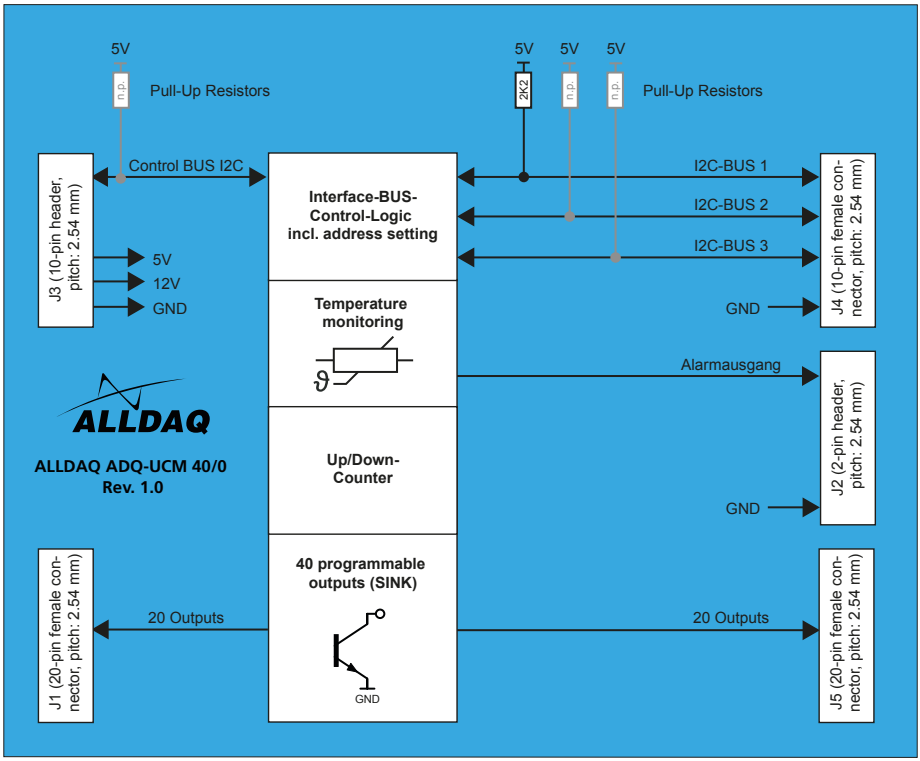
Important features:

- 40 switchable outputs (SINK)
- Temperature monitoring with threshold value setting and alarm output
- Software counter with detailed API functions (Up, Down, Reset)
- Status displays for power
- Can also be used as a stand-alone device (simple control via ADQ-153)
- API for easy integration into your application
- Simple control via the ALLDAQ driver system
- Simple control via I2C (TTL)
- 3 additional I2C BUS interfaces (host TTL)

Typical area of application:

This module can be used on a carrier board (developed by the customer) to switch relays or Mosfet transistors, for example.

3.2 Block diagram ADQ-UCM 40/0 Rev. 1.0



3.3 Voltage supply

The complete ADQ-UCM- 40/0 module is supplied via pin header J3 (5VDC, 12VDC, GND).

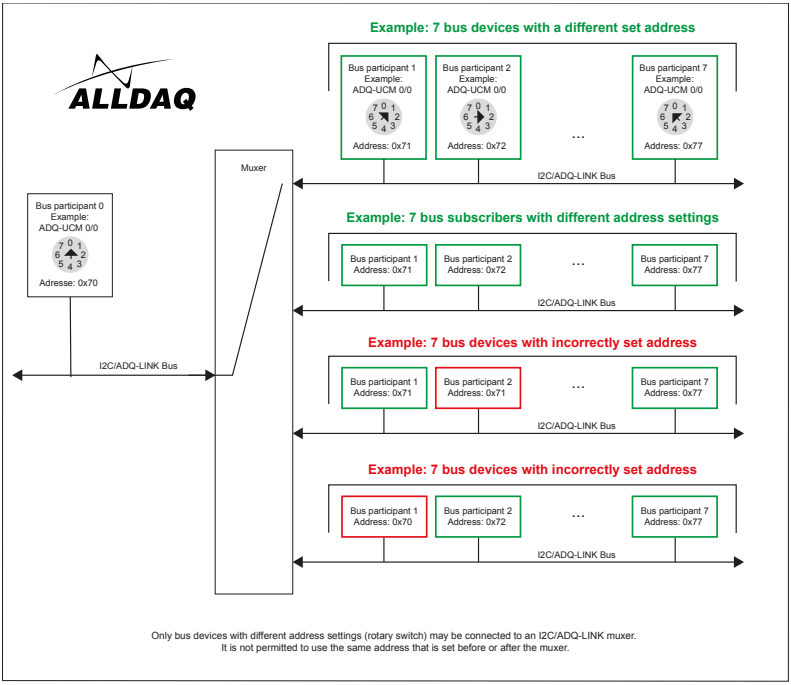
3.4 Control

An I2C host is always required to fully control the ADQ-UCM 40/0 (e.g. ADQ-153, ADQ-SCU-BB).

3.5 Rotary switch

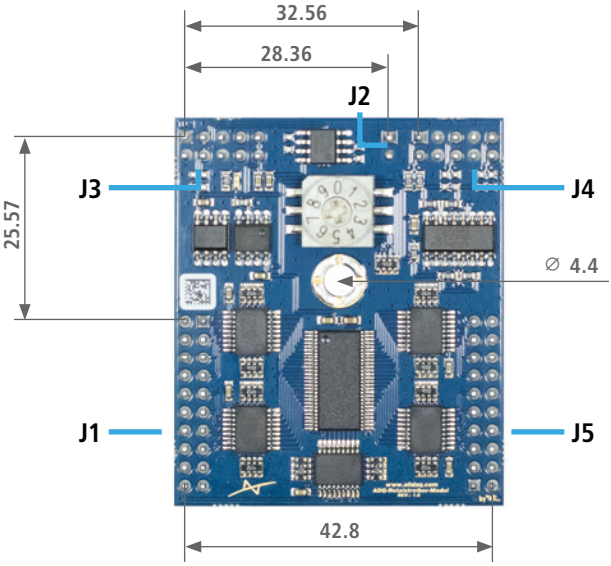
Use the rotary switch to determine the main address of the ADQ-UCM 40/0 module. The address may only occur once on an I2C bus. This also applies to other peripherals. All ADQ-UCMs have an adjustable rotary switch.

Position	Adress (7 bit)
0	0x70
1	0x71
2	0x72
3	0x73
4	0x74
5	0x75
6	0x76
7	0x77



3.6 Pin assignment

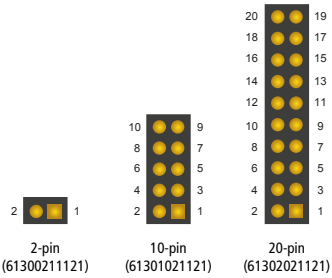
3.6.1 Position of the plug connectors



3.7 Connector types

3.7.1 Type Male connector 2.54 mm pitch

Male connectors from Würth with different numbers of poles are used. We recommend the Würth series as a mating socket: 61301021821 (e.g. 10-pin).



3.8 Pin assignment

3.8.1 J2

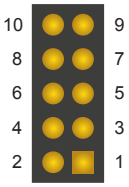
The temperature monitoring alarm output can be tapped via this connector.

2-pin
(61300211121)

Pin	J2	Note
1	Alarm output (TTL)	Temperature monitoring
2	GND_PC	PC ground

3.8.2 J3

The power supply and the I2C control BUS are connected to the module via this connector.

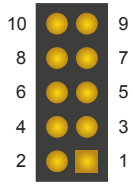


10-pin
(61301021121)

Pin	J3	Note
1	GND_PC	PC ground
2	GND_PC	PC ground
3	SCL	Control BUS I2C from the host
4	SDA	Control BUS I2C from the host
5	GND_PC	PC ground
6	GND_PC	PC ground
7	+12V_PC	PC power supply unit
8	+12V_PC	PC power supply unit
9	+5V_PC	PC power supply unit
10	+5V_PC	PC power supply unit

3.8.3 J4

Three additional I2C BUS interfaces (host TTL) can be tapped via this connector.

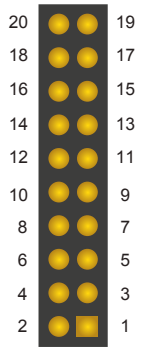


10-pin
(61301021121)

Pin	J4	Note
1	SCL_1	I2C-BUS (TTL)
2	SDA_1	I2C-BUS (TTL)
3	GND_PC	PC ground
4	GND_PC	PC ground
5	SCL_2	I2C-BUS (TTL)
6	SDA_2	I2C-BUS (TTL)
7	GND_PC	PC ground
8	GND_PC	PC ground
9	SCL_3	I2C-BUS (TTL)
10	SDA_3	I2C-BUS (TTL)

3.8.4 J5

The outputs can be tapped via this connector.

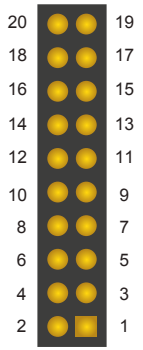


20-pin
(61302021121)

Pin	J5	Port	Note
1	DO_0	P0	Output (SINK)
2	DO_1	P0	Output (SINK)
3	DO_2	P0	Output (SINK)
4	DO_3	P0	Output (SINK)
5	DO_4	P0	Output (SINK)
6	DO_5	P0	Output (SINK)
7	DO_6	P0	Output (SINK)
8	DO_7	P0	Output (SINK)
9	DO_0	P1	Output (SINK)
10	DO_1	P1	Output (SINK)
11	DO_2	P1	Output (SINK)
12	DO_3	P1	Output (SINK)
13	DO_4	P1	Output (SINK)
14	DO_5	P1	Output (SINK)
15	DO_6	P1	Output (SINK)
16	DO_7	P1	Output (SINK)
17	DO_0	P2	Output (SINK)
18	DO_1	P2	Output (SINK)
19	DO_2	P2	Output (SINK)
20	DO_3	P2	Output (SINK)

3.8.5 J1

The outputs can be tapped via this connector.



20-pin
(61302021121)

Pin	J1	Port	Note
1	DO_4	P2	Output (SINK)
2	DO_5	P2	Output (SINK)
3	DO_6	P2	Output (SINK)
4	DO_7	P2	Output (SINK)
5	DO_0	P3	Output (SINK)
6	DO_1	P3	Output (SINK)
7	DO_2	P3	Output (SINK)
8	DO_3	P3	Output (SINK)
9	DO_4	P3	Output (SINK)
10	DO_5	P3	Output (SINK)
11	DO_6	P3	Output (SINK)
12	DO_7	P3	Output (SINK)
13	DO_0	P4	Output (SINK)
14	DO_1	P4	Output (SINK)
15	DO_2	P4	Output (SINK)
16	DO_3	P4	Output (SINK)
17	DO_4	P4	Output (SINK)
18	DO_5	P4	Output (SINK)
19	DO_6	P4	Output (SINK)
20	DO_7	P4	Output (SINK)

3.9 Specifications ADQ-UCM 40/0

Conditions: TA = 25°C unless otherwise specified; warm-up time: 30 minutes.

Element	Condition	Specification
Control and signal processing		ADQ-UCM 40/0 for digital output, control via I2C (TTL)
Supply		Supply via J3: +5V_PC/+12V_PC Supply (±10%) via pin header
Quiescent current consumption	without charge	+12V_PC: max. TBD +5V_PC: max. TBD A
Control BUS I2C (TTL)		100KHZ Address format: 7-bit slave address + read/write bit as LSB Use the rotary switch to determine the main address of the ADQ-UCM 40/0 module. Attention: When calculating the pull-up resistors, the total power of the 3 outputs (I2C-BUS 1/2/3) and the control BUS must not exceed 200mW. Use an I2C buffer if necessary.
I2C-BUS 1 (TTL)		100KHZ Pull-up resistor: 2K2 (5V), see block diagram Attention: Do not use a pull-up resistor on your periphery (SCL_1, SDA_1).
I2C-BUS 2 (TTL)		100KHZ Kein Pull-Up-Widerstand bestückt, siehe Blockschaltbild Sie müssen einen eigenen Pull-Up-Widerstand an Ihrer Peripherie vorsehen. Sie können die Pull-Up-Widerstände an Ihrer Peripherie auch als Voltage-Shifting verwenden. Achtung: Bei der Berechnung der Pull-Up-Widerstände darf die Gesamtleistung, der 3 Abgänge (I2C-BUS 1/2/3) und der Steuer-BUS, nicht 200mW überschreiten. Verwenden Sie gegebenenfalls einen I2C-Buffer.
I2C-BUS 3 (TTL)		100KHZ No pull-up resistor fitted, see block diagram You must provide your own pull-up resistor on your periphery. You can also use the pull-up resistors on your periphery as voltage shifting. Attention: When calculating the pull-up resistors, the total power of the 3 outputs (I2C-BUS 1/2/3) and the control BUS must not exceed 200mW. Use an I2C buffer if necessary.

Element	Condition	Specification
SINK-Output: TBD62083AFNG	U_{typ} = +12V_PC U_{max} = 50V	1 output switched: Imax = 400mA (Ta = 25 °C) 8 outputs switched: Imax = 140mA (Duty = 50%, Ta = 85 °C)
	Low output Voltage: (I_{out})	0,7V Typ. (I_{out} = 350mA) 0,4V Typ. (I_{out} = 200mA) 0,2V Typ. (I_{out} = 100mA)
Alarm output Output level	U_{max} = +5V_PC I_o = -24mA I_o = 24mA	U_{OH} = min. 2,4 V U_{OL} = max. 0,5 V
Temperature range	Operating	0..60 °C (standard)
Air humidity	Operating	20%..55% (non-condensing)
Dimensions (W x D x H)	ADQ-UCM 40/0	45 x 55 x 15 mm
Mounting type	ADQ-UCM 40/0	pluggable
Manufacturer warranty		36 months

4. ADQ-UCM 24/16 Rev. 1.0

4.1 Brief description

The ADQ-UCM 24/16 was developed for use in industrial automation and has 24 switchable outputs (SINK), 16 TTL inputs, as well as temperature monitoring with threshold value setting including alarm output (5V TTL). The ADQ-UCM 24/16 is controlled via the I2C-BUS (TTL). The module also offers 3 additional I2C-BUS interfaces (host TTL).

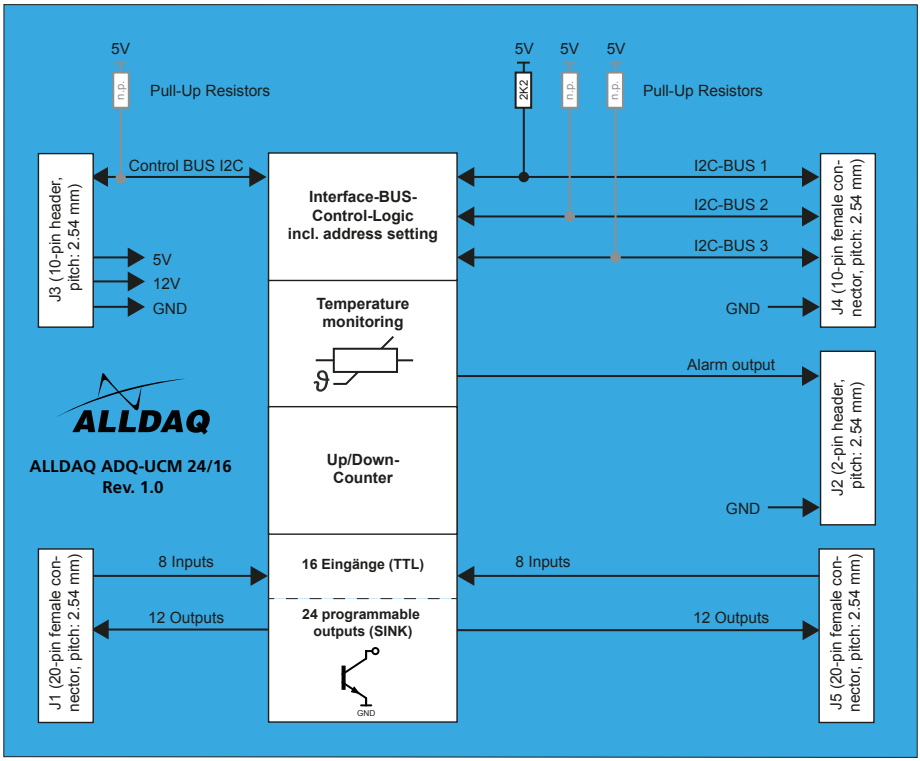
Important features:

- 24 switchable outputs (SINK)
- 16 TTL inputs
- Temperature monitoring with threshold value setting and alarm output
- Software counter with detailed API functions (Up, Down, Reset)
- Status displays for power
- Can also be used as a stand-alone device (simple control via ADQ-153)
- API for easy integration into your application
- Simple control via the ALLDAQ driver system
- Simple control via I2C (TTL)
- 3 additional I2C BUS interfaces (host TTL)

Typical area of application:

- This module can be used on a carrier board (developed by the customer) to switch relays or Mosfet transistors, for example.
- Reading digital signals (sensors and switch states)

4.2 Block diagram ADQ-UCM 24/16 Rev. 1.0



4.3 Power supply

The complete ADQ-UCM- 24/16 module is supplied via pin header J3 (5VDC, 12VDC, GND).

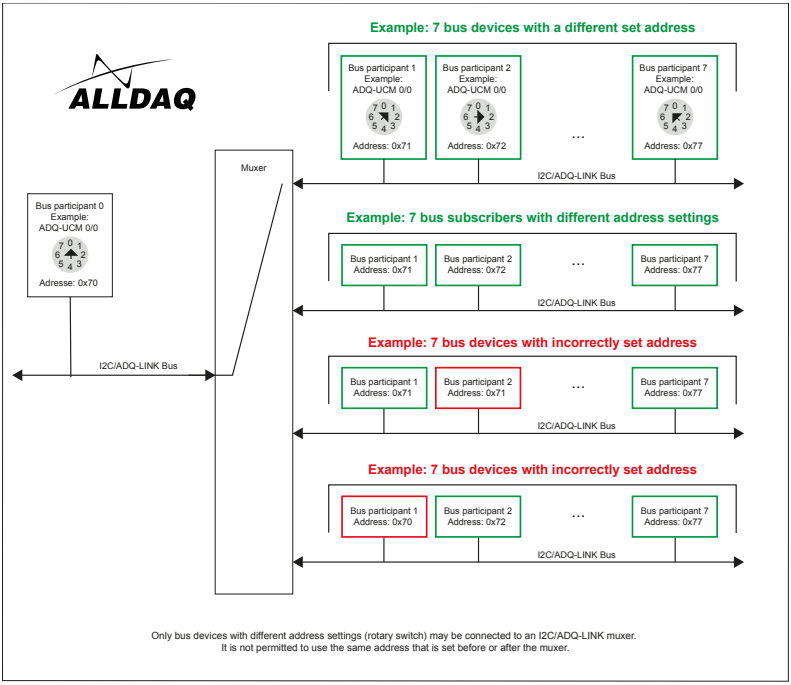
4.4 Control system

An I2C host is always required to fully control the ADQ-UCM 24/16 (e.g. ADQ-153, ADQ-SCU-BB).

4.5 Rotary switch

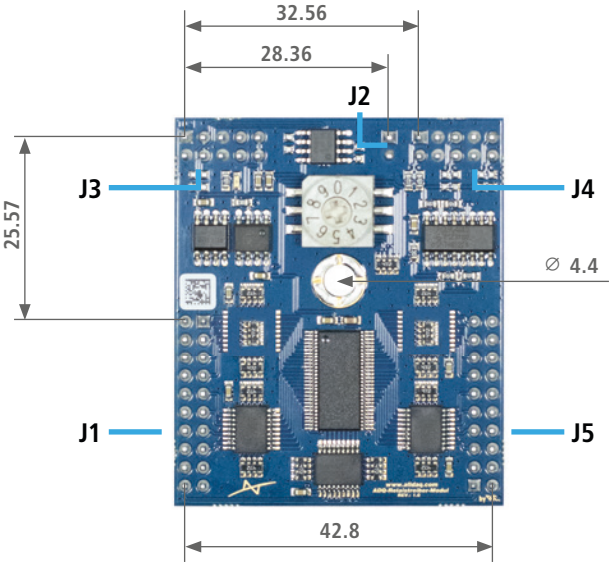
Use the rotary switch to determine the main address of the ADQ-UCM 24/16 module. The address may only occur once on an I2C bus. This also applies to other peripherals. All ADQ-UCMs have an adjustable rotary switch.

Position	Adress (7 bit)
0	0x70
1	0x71
2	0x72
3	0x73
4	0x74
5	0x75
6	0x76
7	0x77



4.6 Pin assignment

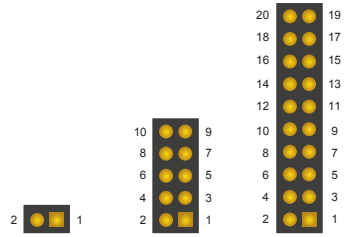
4.6.1 Position of the plug connectors



4.7 Connector types

4.7.1 Type Male connector 2.54 mm pitch

Male connectors from Würth with different numbers of poles are used. We recommend the Würth series as a mating socket: 61301021821 (e.g. 10-pin).



2-pin (61300211121) 10-pin (61301021121) 20-pin (61302021121)

4.8 Steckerbelegung

4.8.1 J2

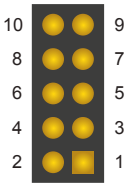
The temperature monitoring alarm output can be tapped via this connector.

2-pin
(61300211121)

Pin	J2	Note
1	Alarm output (TTL)	Temperature monitoring
2	GND_PC	PC ground

4.8.2 J3

The power supply and the I2C control BUS are connected to the module via this connector.

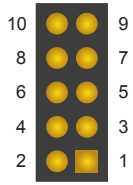


10-pin
(61301021121)

Pin	J3	Note
1	GND_PC	PC ground
2	GND_PC	PC ground
3	SCL	Control BUS I2C from the host
4	SDA	Control BUS I2C from the host
5	GND_PC	PC ground
6	GND_PC	PC ground
7	+12V_PC	PC power supply unit
8	+12V_PC	PC power supply unit
9	+5V_PC	PC power supply unit
10	+5V_PC	PC power supply unit

4.8.3 J4

Three additional I2C BUS interfaces (host TTL) can be tapped via this connector.

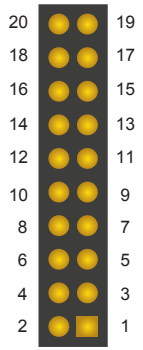


10-pin
(61301021121)

Pin	J4	Note
1	SCL_1	I2C-BUS (TTL)
2	SDA_1	I2C-BUS (TTL)
3	GND_PC	PC ground
4	GND_PC	PC ground
5	SCL_2	I2C-BUS (TTL)
6	SDA_2	I2C-BUS (TTL)
7	GND_PC	PC ground
8	GND_PC	PC ground
9	SCL_3	I2C-BUS (TTL)
10	SDA_3	I2C-BUS (TTL)

4.8.4 J5

The outputs can be tapped via this connector.

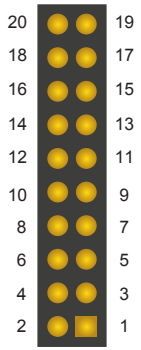


20-pin
(61302021121)

Pin	J5	Port	Bemerkung
1	DI_0	P0	Input (TTL)
2	DI_1	P0	Input (TTL)
3	DI_2	P0	Input (TTL)
4	DI_3	P0	Input (TTL)
5	DI_4	P0	Input (TTL)
6	DI_5	P0	Input (TTL)
7	DI_6	P0	Input (TTL)
8	DI_7	P0	Input (TTL)
9	DO_0	P1	Output (SINK)
10	DO_1	P1	Output (SINK)
11	DO_2	P1	Output (SINK)
12	DO_3	P1	Output (SINK)
13	DO_4	P1	Output (SINK)
14	DO_5	P1	Output (SINK)
15	DO_6	P1	Output (SINK)
16	DO_7	P1	Output (SINK)
17	DO_0	P2	Output (SINK)
18	DO_1	P2	Output (SINK)
19	DO_2	P2	Output (SINK)
20	DO_3	P2	Output (SINK)

4.8.5 J1

The outputs can be tapped via this connector.



20-pin
(61302021121)

Pin	J1	Port	Bemerkung
1	DO_4	P2	Output (SINK)
2	DO_5	P2	Output (SINK)
3	DO_6	P2	Output (SINK)
4	DO_7	P2	Output (SINK)
5	DO_0	P3	Output (SINK)
6	DO_1	P3	Output (SINK)
7	DO_2	P3	Output (SINK)
8	DO_3	P3	Output (SINK)
9	DO_4	P3	Output (SINK)
10	DO_5	P3	Output (SINK)
11	DO_6	P3	Output (SINK)
12	DO_7	P3	Output (SINK)
13	DI_0	P4	Input (TTL)
14	DI_1	P4	Input (TTL)
15	DI_2	P4	Input (TTL)
16	DI_3	P4	Input (TTL)
17	DI_4	P4	Input (TTL)
18	DI_5	P4	Input (TTL)
19	DI_6	P4	Input (TTL)
20	DI_7	P4	Input (TTL)

4.9 Specifications ADQ-UCM 24/16

Bedingungen: TA = 25°C sofern nicht anders angegeben; Warmlaufzeit: 30 Minuten.

Element	Condition	Specifications
Control and signal processing		ADQ-UCM 24/16 for digital output, control via I2C (TTL)
Supply		Supply via J3: +5V_PC/+12V_PC Supply (±10%) via pin header
Quiescent current consumption	without charge	+12V_PC: max. TBD +5V_PC: max. TBD A
Control BUS I2C (TTL)		100KHZ Address format: 7-bit slave address + read/write bit as LSB Use the rotary switch to determine the main address of the ADQ-UCM 40/0 module. Attention: When calculating the pull-up resistors, the total power of the 3 outputs (I2C-BUS 1/2/3) and the control BUS must not exceed 200mW. Use an I2C buffer if necessary
I2C-BUS 1 (TTL)		100KHZ Pull-up resistor: 2K2 (5V), see block diagram Attention: Do not use a pull-up resistor on your periphery (SCL_1, SDA_1).
I2C-BUS 2 (TTL)		100KHZ No pull-up resistor fitted, see block diagram You must provide your own pull-up resistor on your periphery. You can also use the pull-up resistors on your periphery as voltage shifting. Attention: When calculating the pull-up resistors, the total power of the 3 outputs (I2C-BUS 1/2/3) and the control BUS must not exceed 200mW. Use an I2C buffer if necessary.
I2C-BUS 3 (TTL)		100KHZ No pull-up resistor fitted, see block diagram You must provide your own pull-up resistor on your periphery. You can also use the pull-up resistors on your periphery as voltage shifting. Attention: When calculating the pull-up resistors, the total power of the 3 outputs (I2C-BUS 1/2/3) and the control BUS must not exceed 200mW. Use an I2C buffer if necessary.

Element	Condition	Specifications
SINK-Output: TBD62083AFNG	U_{typ} = +12V_PC U_{max} = 50V	1 output switched: Imax = 400mA (Ta = 25 °C) 8 outputs switched: Imax = 140mA (Duty = 50%, Ta = 85 °C)
	Low output Voltage: (I_{out})	0,7V Typ. (I_{out} = 350mA) 0,4V Typ. (I_{out} = 200mA) 0,2V Typ. (I_{out} = 100mA)
Alarm output Output level	U_{max} = +5V_PC I_o = -24mA I_o = 24mA	U_{OH} = min. 2,4 V U_{OL} = max. 0,5 V
TTL inputs Input level	5V supply	U_{IH}: min. 2,0 V U_{IL}: max. 0,8 V
Input current TTL inputs	5V supply	I_I: typ. ±1 µA
Temperature range	Operating	0..60 °C (standard)
Air humidity	Operating	20%..55% (non-condensing)
Dimensions (B x T x H)	ADQ-UCM 24/16	45 x 55 x 15 mm
Mounting type	ADQ-UCM 24/16	pluggable
Manufacturer warranty		36 months

5. ADQ-UCM 40/0 Rev. 2.0

5.1 Brief description

The ADQ-UCM 40/0 was developed for use in industrial automation and provides, among other things, a unique 48-bit ID, 40 switchable outputs (SINK) and temperature monitoring with threshold value setting including alarm output (5V TTL). The ADQ-UCM 40/0 is controlled via the ADQ-LINK bus. The module also offers 1 additional I2C BUS (host TTL) and an ADQ-LINK OUT bus interface.

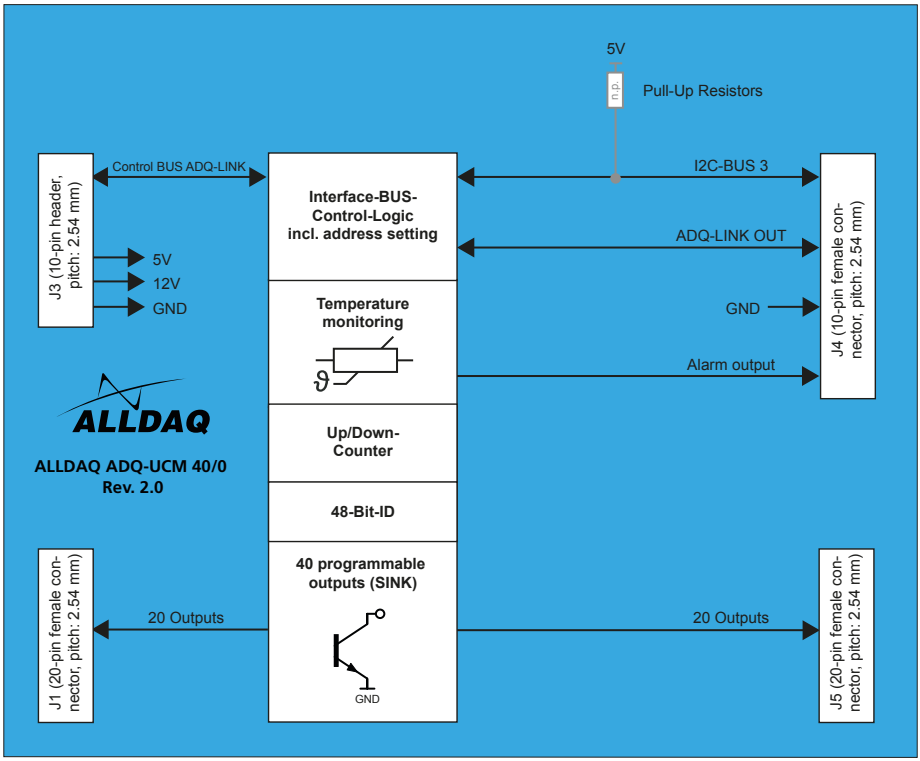
Important features:

- Provides a unique 48-bit ID for e.g. coding of devices (readable via software)
- Temperature monitoring with threshold setting and alarm output
- Software counter with detailed API functions (Up, Down, Reset)
- Status displays for power, ADQ-LINK
- Can also be used as a stand-alone device (simple control via ADQ-153)
- API for easy integration into your application
- Simple control via the ALLDAQ driver system
- Simple control via ADQ-LINK
- 1 additional I2C BUS interface (host TTL)
- 1 additional ADQ-LINK OUT interface

Typical area of application:

This module can be used on a carrier board (developed by the customer) to switch relays or Mosfet transistors, for example.

5.2 Block diagram ADQ-UCM 40/0 Rev. 2.0



5.3 Voltage supply

The complete ADQ-UCM- 40/0 module is supplied via pin header J3 (5VDC, 12VDC, GND).

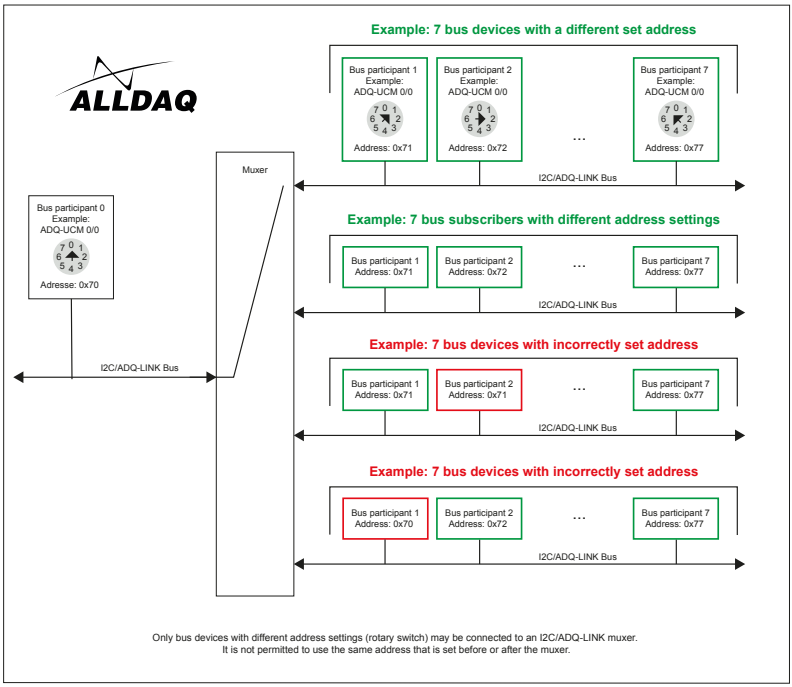
5.4 Control

An ADQ-LINK bus is always required to fully control the ADQ-UCM 24/16 (e.g. ADQ-153, ADQ-SCU-BB).

5.5 Rotary switch

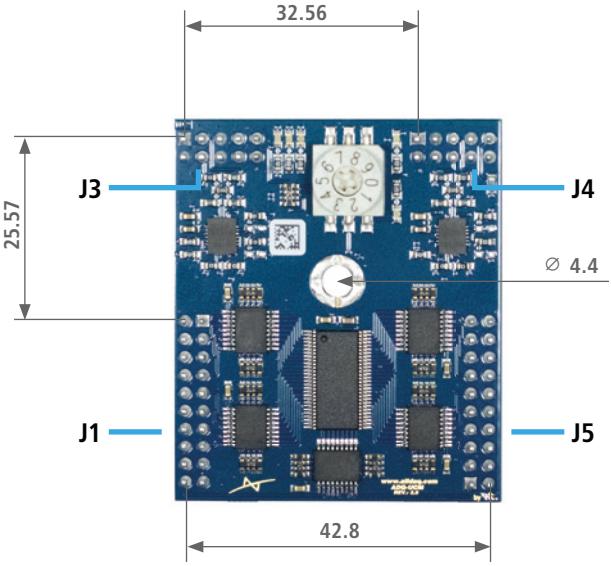
Use the rotary switch to determine the main address of the ADQ-UCM 40/0 module. The address may only occur once on an I2C bus. This also applies to other peripherals. All ADQ-UCMs have an adjustable rotary switch.

Position	Adress (7 bit)
0	0x70
1	0x71
2	0x72
3	0x73
4	0x74
5	0x75
6	0x76
7	0x77



5.6 Pin assignment

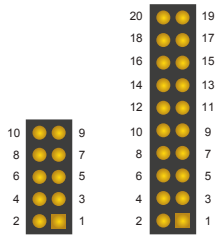
5.6.1 Position of the plug connectors



5.7 Connector types

5.7.1 Type Male connector 2.54 mm pitch

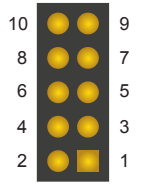
Male connectors from Würth with different numbers of poles are used. We recommend the Würth series as a mating socket: 61301021821 (e.g. 10-pin).



5.8 Pin assignment

5.8.1 J3

The power supply and the ADQ-LINK control BUS are connected to the module via this plug connector.

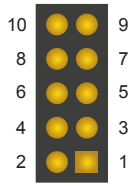


10-pin
(61301021121)

Pin	J3	Note
1	GND_PC	PC ground
2	GND_PC	PC ground
3	+ ADQ-LINK	Control BUS from the host (differential BUS)
4	- ADQ-LINK	Control BUS from the host (differential BUS)
5	GND_PC	PC ground
6	GND_PC	PC ground
7	+12V_PC	PC power supply unit
8	+12V_PC	PC power supply unit
9	+5V_PC	PC power supply unit
10	+5V_PC	PC power supply unit

5.8.2 J4

This connector can be used to tap 1 additional I2C-BUS (Host-TTL) / ADQ-LINK OUT (Differential BUS) interface.

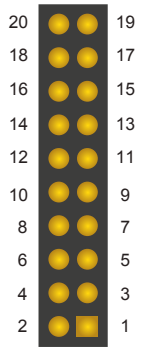


10-pin
(61301021121)

Pin	J4	Note
1	SCL_3	I2C-BUS (TTL)
2	SDA_3	I2C-BUS (TTL)
3	GND_PC	PC ground
4	GND_PC	PC ground
5	+ ADQ-LINK OUT	Differential BUS
6	- ADQ-LINK OUT	Differential BUS
7	GND_PC	PC ground
8	GND_PC	PC ground
9	Alarm output (TTL)	Temperature monitoring
10	GND_PC	PC ground

5.8.3 J5

The outputs can be tapped via this connector.

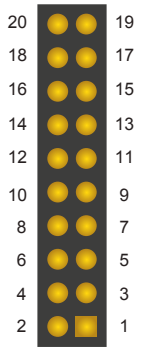


20-pin
(61302021121)

Pin	J5	Port	Bemerkung
1	DO_0	P0	Output (SINK)
2	DO_1	P0	Output (SINK)
3	DO_2	P0	Output (SINK)
4	DO_3	P0	Output (SINK)
5	DO_4	P0	Output (SINK)
6	DO_5	P0	Output (SINK)
7	DO_6	P0	Output (SINK)
8	DO_7	P0	Output (SINK)
9	DO_0	P1	Output (SINK)
10	DO_1	P1	Output (SINK)
11	DO_2	P1	Output (SINK)
12	DO_3	P1	Output (SINK)
13	DO_4	P1	Output (SINK)
14	DO_5	P1	Output (SINK)
15	DO_6	P1	Output (SINK)
16	DO_7	P1	Output (SINK)
17	DO_0	P2	Output (SINK)
18	DO_1	P2	Output (SINK)
19	DO_2	P2	Output (SINK)
20	DO_3	P2	Output (SINK)

5.8.4 J1

The outputs can be tapped via this connector.



20-pin
(61302021121)

Pin	J1	Port	Bemerkung
1	DO_4	P2	Output (SINK)
2	DO_5	P2	Output (SINK)
3	DO_6	P2	Output (SINK)
4	DO_7	P2	Output (SINK)
5	DO_0	P3	Output (SINK)
6	DO_1	P3	Output (SINK)
7	DO_2	P3	Output (SINK)
8	DO_3	P3	Output (SINK)
9	DO_4	P3	Output (SINK)
10	DO_5	P3	Output (SINK)
11	DO_6	P3	Output (SINK)
12	DO_7	P3	Output (SINK)
13	DO_0	P4	Output (SINK)
14	DO_1	P4	Output (SINK)
15	DO_2	P4	Output (SINK)
16	DO_3	P4	Output (SINK)
17	DO_4	P4	Output (SINK)
18	DO_5	P4	Output (SINK)
19	DO_6	P4	Output (SINK)
20	DO_7	P4	Output (SINK)

5.9 Specifications ADQ-UCM 40/0

Bedingungen: TA = 25°C sofern nicht anders angegeben; Warmlaufzeit: 30 Minuten.

Element	Condition	Specifications
Control and signal processing		ADQ-UCM 40/0 for digital output, control via ADQ-LINK
Supply		Supply via J3: +5V_PC/+12V_PC Supply (±10%) via pin header
Quiescent current consumption	without charge	+12V_PC: max. TBD +5V_PC: max. TBD A
Control BUS ADQ-LINK		100KHZ Address format: 7-bit slave address + read/write bit as LSB Use the rotary switch to determine the main address of the ADQ-UCM 40/0 module.
ADQ-LINK OUT		100KHZ
I2C-BUS 3 (TTL)		100KHZ No pull-up resistor fitted, see block diagram You must provide your own pull-up resistor on your periphery. You can also use the pull-up resistors on your periphery as voltage shifting. Attention: When calculating the pull-up resistors, the total power of the output (I2C-BUS 3) must not exceed 200mW. Use an I2C buffer if necessary.
SINK-Output: TBD62083AFNG	U_{typ} = +12V_PC U_{max} = 50V	1 output switched: Imax = 400mA (Ta = 25 °C) 8 outputs switched: Imax = 140mA (Duty = 50%, Ta = 85 °C)
	Low output Voltage: (I_{out})	0,7V Typ. (I_{out} = 350mA) 0,4V Typ. (I_{out} = 200mA) 0,2V Typ. (I_{out} = 100mA)
Alarm output Output level	U_{max} = +5V_PC I_o = -24mA I_o = 24mA	U_{OH} = min. 2,4 V U_{OL} = max. 0,5 V
Temperature range	Operating	0..60 °C (standard)
Air humidity	Operating	20%..55% (non-condensing)
Dimensions (W x D x H)	ADQ-UCM 40/0	45 x 55 x 15 mm
Mounting type	ADQ-UCM 40/0	pluggable
Manufacturer warranty		36 months

6. ADQ-UCM 24/16 Rev. 2.0

6.1 Short description

The ADQ-UCM 24/16 was developed for use in industrial automation and provides, among other things, a unique 48-bit ID, 24 switchable outputs (SINK), 16 TTL inputs and temperature monitoring with threshold value setting including alarm output (5V TTL). The ADQ-UCM 24/16 is controlled via the ADQ-LINK bus. The module also offers 1 additional I2C BUS (host TTL) and an ADQ-LINK OUT bus interface.

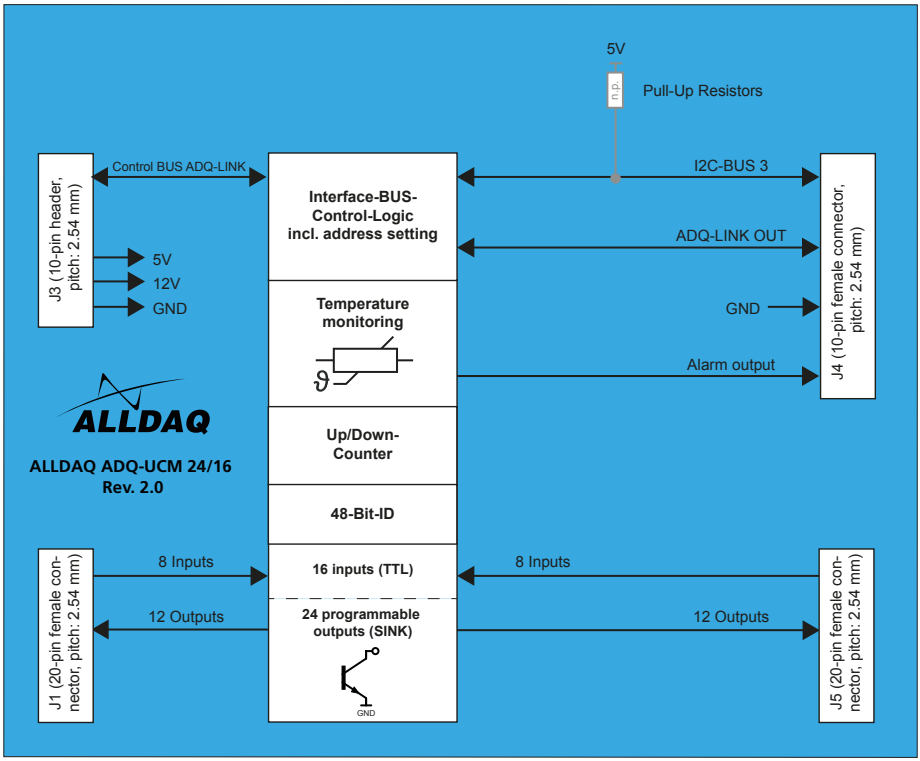
Important features:

- Provides a unique 48-bit ID for e.g. device coding (readable via software)
- 24 switchable outputs (SINK)
- 16 TTL inputs
- Temperature monitoring with threshold setting and alarm output
- Software counter with detailed API functions (Up, Down, Reset)
- Status displays for power, ADQ-LINK
- Can also be used as a stand-alone device (simple control via ADQ-153)
- API for easy integration into your application
- Simple control via the ALLDAQ driver system
- Simple control via I2C (TTL)
- 1 additional I2C BUS interface (host TTL)
- 1 additional ADQ-LINK OUT interface

Typical area of application:

- This module can be used on a carrier board (developed by the customer) to switch relays or Mosfet transistors, for example.
- Reading digital signals (sensors and switch states)

6.2 Block diagram ADQ-UCM 24/16 Rev. 2.0



6.3 Voltage supply

The complete ADQ-UCM- 24/16 module is supplied via pin header J3 (5VDC, 12VDC, GND).

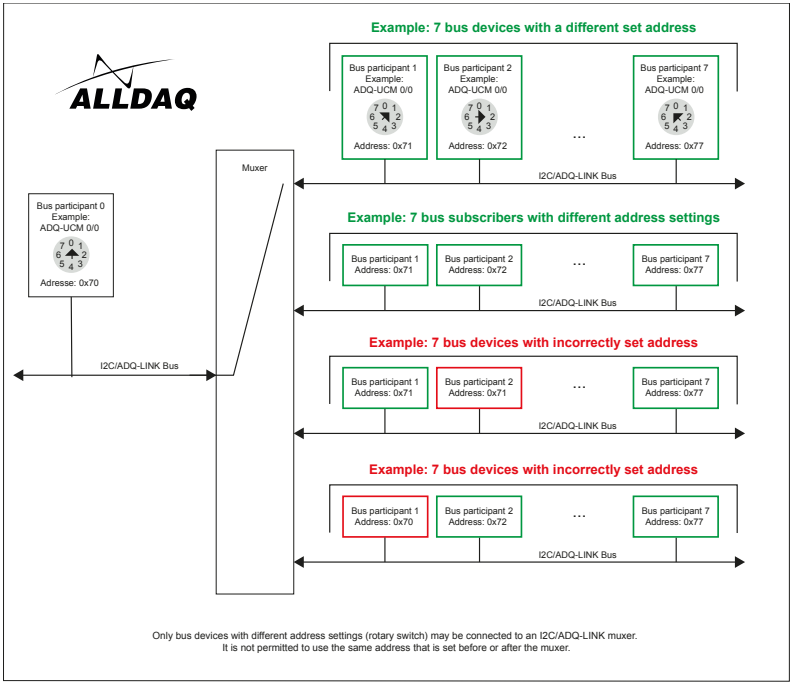
6.4 Control

An ADQ-LINK bus is always required to fully control the ADQ-UCM 24/16 (e.g. ADQ-153, ADQ-SCU-BB).

6.5 Rotary switch

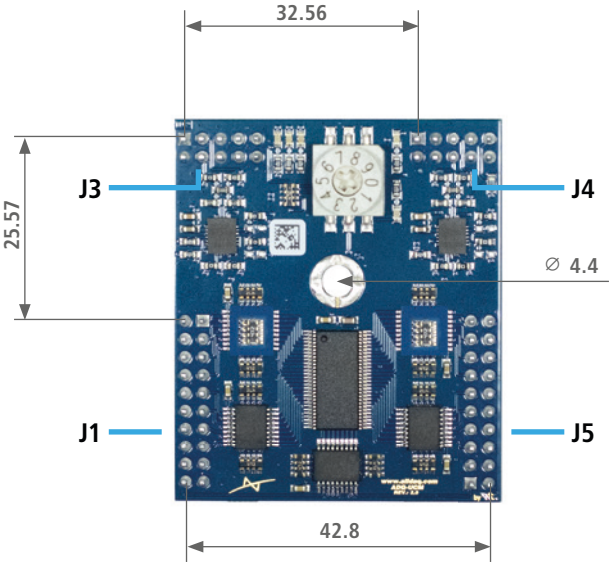
Use the rotary switch to determine the main address of the ADQ-UCM 24/16 module. The address may only occur once on an I2C bus. This also applies to other peripherals. All ADQ-UCMs have an adjustable rotary switch.

Position	Adress (7 bit)
0	0x70
1	0x71
2	0x72
3	0x73
4	0x74
5	0x75
6	0x76
7	0x77



6.6 Pin assignment

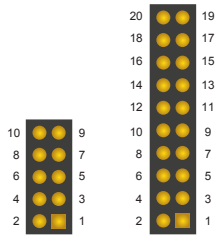
6.6.1 Position of the plug connectors



6.7 Connector types

6.7.1 Type Male connector 2.54 mm pitch

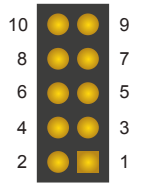
Male connectors from Würth with different numbers of poles are used. We recommend the Würth series as a mating socket: 61301021821 (e.g. 10-pin).



6.8 Pin assignment

6.8.1 J3

The power supply and the ADQ-LINK control BUS are connected to the module via this plug connector.

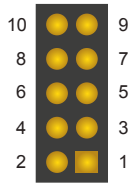


10-pin
(61301021121)

Pin	J3	Note
1	GND_PC	PC ground
2	GND_PC	PC ground
3	+ ADQ-LINK	Control BUS from the host (differential BUS)
4	- ADQ-LINK	Control BUS from the host (differential BUS)
5	GND_PC	PC ground
6	GND_PC	PC ground
7	+12V_PC	PC power supply unit
8	+12V_PC	PC power supply unit
9	+5V_PC	PC power supply unit
10	+5V_PC	PC power supply unit

6.8.2 J4

This connector can be used to tap 1 additional I2C-BUS (Host-TTL) / ADQ-LINK OUT (Differential BUS) interface.

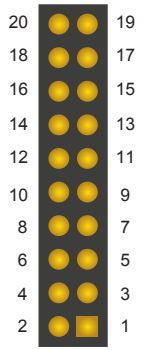


10-pin
(61301021121)

Pin	J4	Note
1	SCL_3	I2C-BUS (TTL)
2	SDA_3	I2C-BUS (TTL)
3	GND_PC	PC ground
4	GND_PC	PC ground
5	+ ADQ-LINK OUT	Differential BUS
6	- ADQ-LINK OUT	Differential BUS
7	GND_PC	PC ground
8	GND_PC	PC ground
9	Alarm output (TTL)	Temperature monitoring
10	GND_PC	PC ground

6.8.3 J5

The outputs can be tapped via this connector.

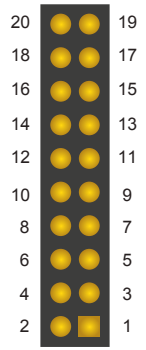


20-pin
(61302021121)

Pin	J5	Port	Bemerkung
1	DI_0	P0	Input (TTL)
2	DI_1	P0	Input (TTL)
3	DI_2	P0	Input (TTL)
4	DI_3	P0	Input (TTL)
5	DI_4	P0	Input (TTL)
6	DI_5	P0	Input (TTL)
7	DI_6	P0	Input (TTL)
8	DI_7	P0	Input (TTL)
9	DO_0	P1	Output (SINK)
10	DO_1	P1	Output (SINK)
11	DO_2	P1	Output (SINK)
12	DO_3	P1	Output (SINK)
13	DO_4	P1	Output (SINK)
14	DO_5	P1	Output (SINK)
15	DO_6	P1	Output (SINK)
16	DO_7	P1	Output (SINK)
17	DO_0	P2	Output (SINK)
18	DO_1	P2	Output (SINK)
19	DO_2	P2	Output (SINK)
20	DO_3	P2	Output (SINK)

6.8.4 J1

The outputs can be tapped via this connector.



20-pin
(61302021121)

Pin	J1	Port	Bemerkung
1	DO_4	P2	Output (SINK)
2	DO_5	P2	Output (SINK)
3	DO_6	P2	Output (SINK)
4	DO_7	P2	Output (SINK)
5	DO_0	P3	Output (SINK)
6	DO_1	P3	Output (SINK)
7	DO_2	P3	Output (SINK)
8	DO_3	P3	Output (SINK)
9	DO_4	P3	Output (SINK)
10	DO_5	P3	Output (SINK)
11	DO_6	P3	Output (SINK)
12	DO_7	P3	Output (SINK)
13	DI_0	P4	Input (TTL)
14	DI_1	P4	Input (TTL)
15	DI_2	P4	Input (TTL)
16	DI_3	P4	Input (TTL)
17	DI_4	P4	Input (TTL)
18	DI_5	P4	Input (TTL)
19	DI_6	P4	Input (TTL)
20	DI_7	P4	Input (TTL)

6.9 Specifications ADQ-UCM 24/16

Bedingungen: TA = 25°C sofern nicht anders angegeben; Warmlaufzeit: 30 Minuten.

Element	Condition	Specifications
Control and signal processing		ADQ-UCM 24/16 for digital output, control via ADQ-LINK
Supply		Supply via J3: +5V_PC/+12V_PC Supply (±10%) via pin header
Quiescent current consumption	without charge	+12V_PC: max. TBD +5V_PC: max. TBD A
Control BUS ADQ-LINK		100KHZ Address format: 7-bit slave address + read/write bit as LSB Use the rotary switch to determine the main address of the ADQ-UCM 40/0 module.
ADQ-LINK OUT		100KHZ
I2C-BUS 3 (TTL)		100KHZ No pull-up resistor fitted, see block diagram You must provide your own pull-up resistor on your periphery. You can also use the pull-up resistors on your periphery as voltage shifting. Attention: When calculating the pull-up resistors, the total power of the output (I2C-BUS 3) must not exceed 200mW. Use an I2C buffer if necessary.
SINK-Output: TBD62083AFNG	U_{typ} = +12V_PC U_{max} = 50V	1 output switched: Imax = 400mA (Ta = 25 °C) 8 outputs switched: Imax = 140mA (Duty = 50%, Ta = 85 °C)
	Low output Voltage: (I_{out})	0,7V Typ. (I_{out} = 350mA) 0,4V Typ. (I_{out} = 200mA) 0,2V Typ. (I_{out} = 100mA)
Alarm output Output level	U_{max} = +5V_PC I_o = -24mA I_o = 24mA	U_{OH} = min. 2,4 V U_{OL} = max. 0,5 V
TTL inputs Input level	5V supply	U_{IH}: min. 2,0 V U_{IL}: max. 0,8 V
Input current TTL inputs	5V supply	I_I: typ. ±1 µA
Temperature range	Operating	0..60 °C (standard)
Air humidity	Operating	20%..55% (non-condensing)
Dimensions (W x D x H)	ADQ-UCM 24/16	45 x 55 x 15 mm
Mounting type	ADQ-UCM 24/16	pluggable
Manufacturer warranty		36 months

7. ADQ-UCM EXT/1

7.1 Short description

The ADQ-UCM EXT/1 was developed for use in industrial automation and provides, among other things, a unique 48-bit ID, 4 switchable relays (contact type: 2-way changeover contact) and temperature monitoring with threshold value setting. The ADQ-UCM EXT/1 is controlled via the ADQ-LINK bus. The module also offers 1 additional ADQ-LINK OUT bus interface.

The ADQ-UCM EXT/1 is a carrier board that is combined with a standard ADQ-UCM 40/0 Rev. 2.0 (see 7.2 Block diagram, as well as 7.6.1 Position of the plug connectors).

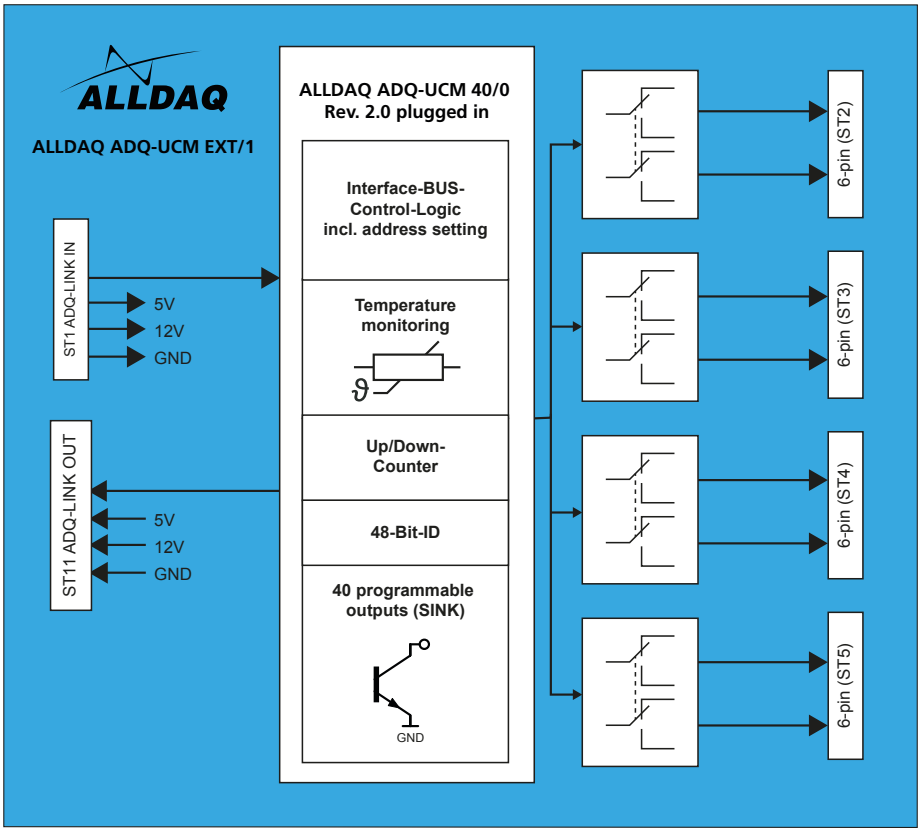
Important features:

- Provides a unique 48-bit ID for e.g. device coding (readable via software)
- 4 switchable relays (contact type: 2-way changeover contact)
- Temperature monitoring with threshold value setting
- Provides a unique 48-bit ID for e.g. device coding (readable via software)
- Software counter with detailed API functions (Up, Down, Reset)
- Status displays for power, ADQ-LINK
- Can also be used as a stand-alone device (simple control via ADQ-153)
- API for easy integration into your application
- Simple control via the ALLDAQ driver system
- Simple control via ADQ-LINK
- 1 additional ADQ-LINK OUT interface

Typical area of application:

- Switching lamps
- Switching fans
- Switching signals
- Switching power supply

7.2 Block diagram ADQ-UCM EXT/1



7.3 Power supply

The complete module is supplied via connector ST1 (5VDC, 12VDC, GND).

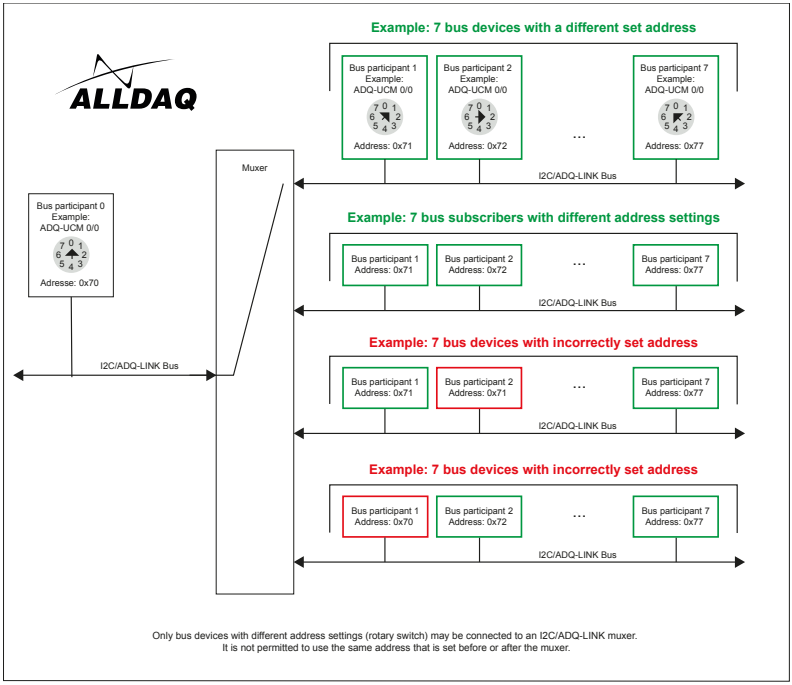
7.4 Control

An ADQ-Link host is always used to fully control the ADQ-UCM EXT/1 (e.g. ADQ-153, ADQ-SCU-BB).

7.5 Rotary switch

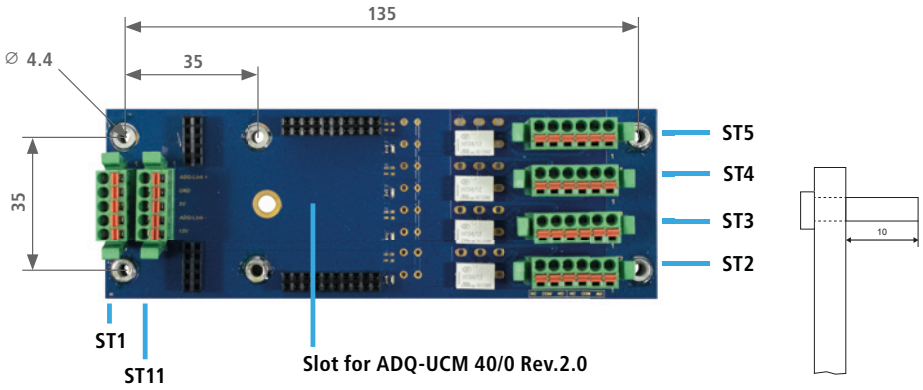
Use the rotary switch to determine the main address of the ADQ-UCM EXT/1 module. The address may only occur once on an ADQ link. This also applies to other peripherals. All ADQ-UCMs have an adjustable rotary switch.

Position	Adress (7 bit)
0	0x70
1	0x71
2	0x72
3	0x73
4	0x74
5	0x75
6	0x76
7	0x77



7.6 Pin assignment

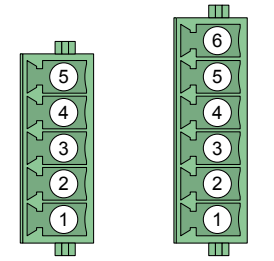
7.6.1 Position of the plug connectors



7.7 Connector types

7.7.1 Type Würth

Connectors from the Therma/Würth 69130513.... series with various numbers of poles are used.
are used.



5-pin
(691305130005)

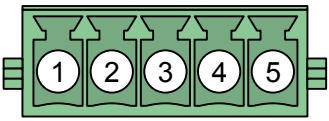
6-pin
(691305130006)

7.8 Pin assignment

7.8.1 ST1

This connector can be used to control the ADQ-UCM EXT1 via the ADQ-Link. ADQ-Link-IN (point to point): ST1

- Overvoltage protection of cables up to ± 60 V / ADQ devices can be set down up to 100 m (twisted pair)
- IEC Level 4 ESD ± 8 kV and EFT ± 5 kV
- Status LED ADQ-LINK (yellow, ADQ-UCM 40/0 Rev. 2.0), if connection to a remote device is available



Würth 5-pin (691305130005)
Mating connector (691305130005)

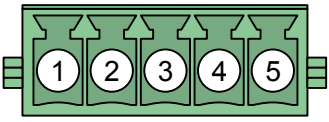
Pin	ST1	Note
1	+ADQ-LINK	Differential BUS
2	GND_PC	PC ground
3	+5V_PC	PC power supply unit
4	-ADQ-LINK	Differential BUS
5	+12V_PC	PC power supply unit

Note: Route the ADQ link via a simple twisted pair cable (unshielded).

7.8.2 ST11

The ADQ-Link-OUT can be tapped via this plug connector using the ADQ-UCM EXT1. ADQ-Link-OUT (point to point): ST11

- Overvoltage protection of cables up to ± 60 V / ADQ devices can be set down up to 100 m (twisted pair)
- IEC Level 4 ESD ± 8 kV and EFT ± 5 kV
- Status LED ADQ-LINK (yellow, ADQ-UCM 40/0 Rev. 2.0), if connection to a remote device is available

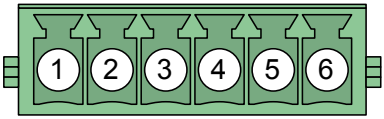


Würth 5-pin (691305130005)
Mating connector (691305130005)

Pin	ST11	Bemerkung
1	+ADQ-LINK	Differential BUS
2	GND_PC	PC ground
3	+5V_PC	PC power supply unit
4	-ADQ-LINK	Differential BUS
5	+12V_PC	PC power supply unit

Note: Route the ADQ link via a simple twisted pair cable (unshielded).

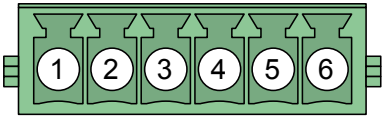
7.8.3 ST2



Würth 6-pin (691305130006)
Mating connector (691305130006)

Pin	Description	Note
1	REL1_NO1	Normally open contact of relays
2	REL1_COM1	Changeover contact of relay
3	REL1_NC1	Normally closed contact of relay
4	REL1_NO2	Normally open contact of relays
5	REL1_COM2	Changeover contact of relay
6	REL1_NC2	Normally closed contact of relay

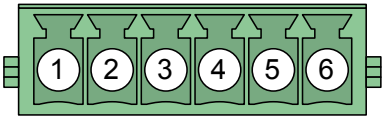
7.8.4 ST3



Würth 6-pin (691305130006)
Mating connector (691305130006)

Pin	Description	Note
1	REL2_NO1	Normally open contact of relays
2	REL2_COM1	Changeover contact of relay
3	REL2_NC1	Normally closed contact of relay
4	REL2_NO2	Normally open contact of relays
5	REL2_COM2	Changeover contact of relay
6	REL2_NC2	Normally closed contact of relay

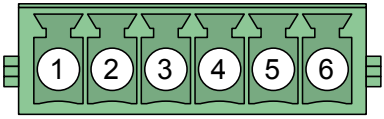
7.8.5 ST4



Würth 6-pin (691305130006)
Mating connector (691305130006)

Pin	Description	Note
1	REL3_NO1	Normally open contact of relays
2	REL3_COM1	Changeover contact of relay
3	REL3_NC1	Normally closed contact of relay
4	REL3_NO2	Normally open contact of relays
5	REL3_COM2	Changeover contact of relay
6	REL3_NC2	Normally closed contact of relay

7.8.6 ST5



Würth 6-pin (691305130006)
Mating connector (691305130006)

Pin	Description	Note
1	REL4_NO1	Normally open contact of relays
2	REL4_COM1	Changeover contact of relay
3	REL4_NC1	Normally closed contact of relay
4	REL4_NO2	Normally open contact of relays
5	REL4_COM2	Changeover contact of relay
6	REL4_NC2	Normally closed contact of relay

7.9 Specifications ADQ-UCM EXT/1

Conditions: TA = 25°C unless otherwise specified; warm-up time: 30 minutes.

Element	Condition	Specifications
Control and signal processing	recommended	ADQ-UCM EXT/1 for digital output (relay) and control via ADQ-Link
Supply		Supply via ST1: 12 V/5V supply (±10%) via Würth plug connector
Quiescent current consumption	without ADQ-LINK OUT	12 V: max. TBD A/5V: max. TBD A
Temperature range	Operating	0..60 °C (standard)
Air humidity	Operating	20%..55% (non-condensing)
Dimensions (W x D x H)	ADQ-UCM EXT/1	50 x 145 x 40 mm
Mounting type	ADQ-UCM EXT/1	Screwable
Manufacturer warranty		36 months

7.9.1 Small signal relay for ADQ-UCM EXT/1

Element	Condition	Specifications
Type		FTR-B3CA()Z Standard
Quantity		4 Relay
Contact type		2-pin changeover contact (DPDT)
Contact material		Silver/nickel with gold plating
Contact resistance	1 A / 6 VDC	max. 75 mΩ at 1 A/6 VDC
Switching time	Response time	max. 3 ms
	Fallback time	max. 3 ms
Switching cycles	mechanical	min. 50.000.000

8. Appendix

8.1 Accessories

ADQ products

- ADQ-63 (item no. 188372), ADQ-LINK bus control box
- ADQ-153 (item no. 185076), USB control box for ADQ-LINK bus

8.2 Manufacturer and support

ALLNET® is a registered trademark of ALLNET® GmbH Computersysteme. If you have any questions, problems or require product information of any kind, please contact the manufacturer directly:

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Division ALLDAQ
Maistrasse 2, D-82110 Germering

E-Mail: support@alldaq.com
Phone: +49 (0)89 894 222 – 474
Fax: +49 (0)89 894 222 – 33
Internet: www.alldaq.com

8.3 Packaging Ordinance

"In principle, manufacturers and distributors are obliged to ensure that sales packaging is taken back by the end consumer after use and reused or recycled." (according to § 4 sentence 1 of the Packaging Ordinance). If you as a customer have any problems with the disposal of packaging and shipping materials, please send an email to info@allnet.de.

8.4 Recycling notice and RoHS conformity

The ADQ-LB system bears the CE mark.
This device fulfills the requirements of EU Directive 2004/108/EC, the Electromagnetic Compatibility Directive and the mutual recognition of its conformity. Conformity with the above directive is confirmed by the CE mark on the device.

ALLNET® products are manufactured in compliance with RoHS (Restriction of the use of certain hazardous substances).

8.5 CE-Labeling

The ADQ-LB system bears the CE mark.
This device fulfills the requirements of EU Directive 2004/108/EC, the Electromagnetic Compatibility Directive and the mutual recognition of its conformity. Conformity with the above directive is confirmed by the CE mark on the device.

8.6 Warranty

Within the warranty period, we will rectify manufacturing and material defects free of charge. You can find the warranty conditions valid for your country on the homepage of your distributor. If you have any questions or problems with the application, you can reach us during our normal opening hours on the following telephone number +49 (0)89 894 222 - 474 or by e-mail to: support@alldaq.com.

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