



UR20 Analog Output Modules

UR20-2AO-UI-16

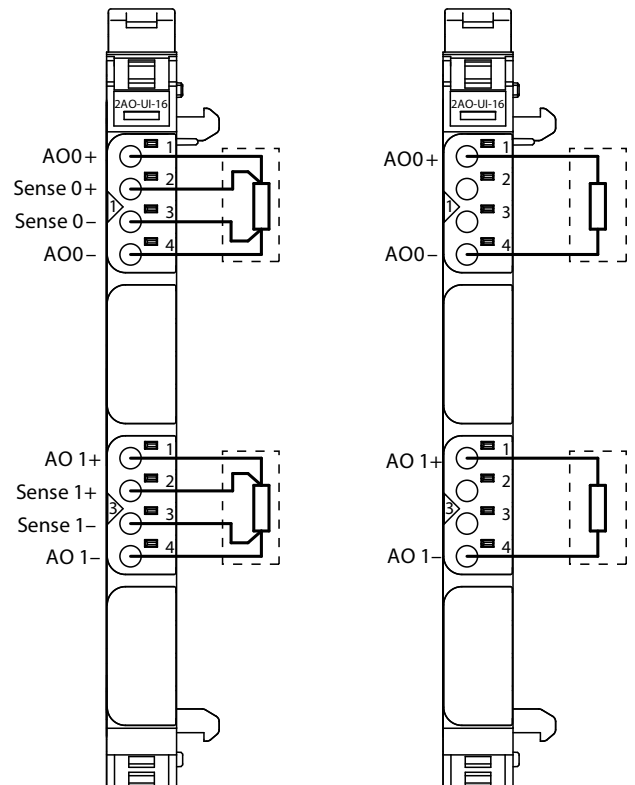
The analog output module UR20-2AO-UI-16 can control up to 2 analog actuators with $\pm 10V$, $\pm 5V$, $0-10V$, $0-5V$, $2-10V$, $1-5V$, $0-20\text{ mA}$ or $4-20\text{ mA}$. The resolution is 16 bit per channel.

- An actuator can be connected to each connector in a 2-wire or 4-wire connection.
- The internal switching is carried out automatically.
- The output range is defined using parameterization.
- A status LED is assigned to each channel.
- The outputs are supplied with power from the output current path I_{OUT} .
- The outputs are decoupled from the system bus I_{SYS} , but there is no potential isolation to the output current path I_{OUT} .



Technical Specifications - UR20-2AO-UI-16		
Price		\$242.00
Drawing		PDF
Outputs		
Number		2
Output levels	Voltage	$0-5V$, $\pm 5V$, $0-10V$, $\pm 10V$, $1-5V$, $2-10V$
	Current	$0-20\text{ mA}$, $4-20\text{ mA}$
Response time		1 ms for 2 channels
Resolution		16 bits
Accuracy		0.1% FSR max., 0.05% FSR typ.
Temperature coefficient		30 ppm/K
Max. error between T_{min} and T_{max}		$\pm 0.24\%$ FSR
Monotonicity		Yes
Crosstalk between the channels		$\pm 0.001\%$ FSR max.
Repeat accuracy		$< \pm 1\text{ mV RMS}$
Voltage load resistance		$\geq 1\text{ k}\Omega$
Current load resistance		$\leq 600\Omega$
Actuator connection		Automatic detection: 2-wire (current and voltage) or 4-wire (voltage)
Short-circuit-proof		Yes
Module diagnosis		Yes
Individual channel diagnosis		No
Substitute value		Yes
Supply		
Supply voltage for system, inputs and outputs		24 VDC $+20\%$ / -15%
Current consumption from system current path I_{SYS}		8 mA
Current consumption from output current path I_{OUT}		56 mA
Weight		
Weight (operational status)		83g

Terminal Connections





UR20 Analog Output Modules

UR20-4AO-UI-16

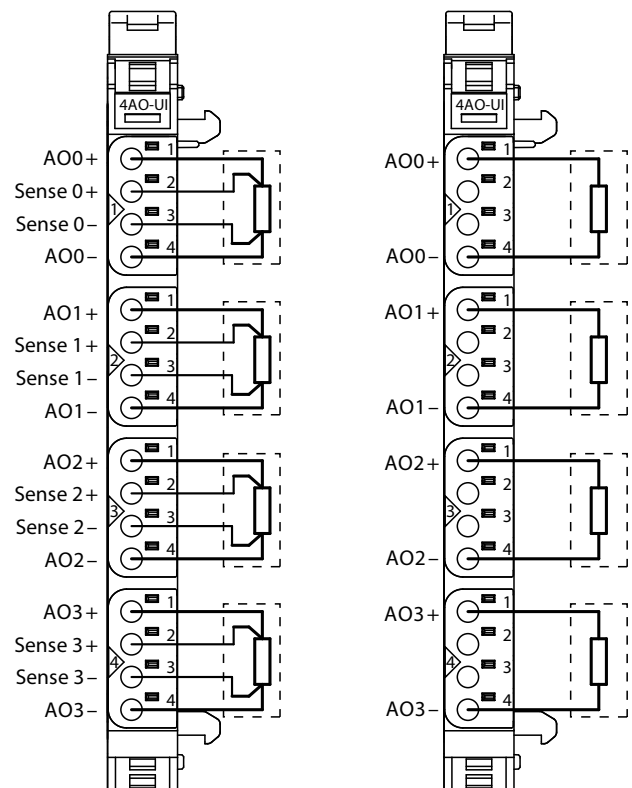
The analog output module UR20-4AO-UI-16 can control up to 4 analog actuators with $\pm 10V$, $\pm 5V$, $0-10V$, $0-5V$, $2-10V$, $1-5V$, $0-20\text{ mA}$ or $4-20\text{ mA}$. The resolution is 16 bit per channel.

- An actuator can be connected to each connector in a 2-wire or 4-wire connection, the internal switching is carried out automatically.
- The output range is defined using parameterization.
- A status LED is assigned to each channel.
- The outputs are supplied with power from the output current path I_{OUT} .
- The outputs are decoupled from the system bus I_{SYS} , but there is no potential isolation to the output current path I_{OUT} .



Technical Specifications - UR20-4AO-UI-16		
Price		\$379.00
Drawing		PDF
Outputs		
Number		4
Output levels	Voltage	$0-5V$, $\pm 5V$, $0-10V$, $\pm 10V$, $1-5V$, $2-10V$
	Current	$0-20\text{ mA}$, $4-20\text{ mA}$
Response time		1 ms for 4 channels
Resolution		16 bits
Accuracy		0.1% FSR max., 0.05% FSR typ.
Temperature coefficient		30 ppm/K
Max. error between T_{min} and T_{max}		$\pm 0.24\%$ FSR
Monotonicity		Yes
Crosstalk between the channels		$\pm 0.001\%$ FSR max.
Repeat accuracy		$< \pm 1\text{ mV RMS}$
Voltage load resistance		$\geq 1\text{ k}\Omega$ (at $> 50^\circ\text{C}$ ambient temperature: max. 25 mA total sensor current)
Current load resistance		$\leq 600\Omega$
Actuator connection		Automatic detection: 2-wire (current and voltage) or 4-wire (voltage)
Short-circuit-proof		Yes
Module diagnosis		Yes
Individual channel diagnosis		No
Substitute value		Yes
Supply		
Supply voltage for system, inputs and outputs		24 VDC $+20\%$ / -15%
Current consumption from system current path I_{SYS}		8 mA
Current consumption from output current path I_{OUT}		110 mA
Weight		
Weight (operational status)		83g

Terminal Connections





UR20 Module Specifications

Environmental Specifications - UR20 I/O Modules		
Degree of protection (IEC 60529)		IP20
Flammability rating UL 94		V-0
Material of power contacts and data contacts		Ni-Au, 3µm
Temperature	Operation	-20 + 60 °C [-4 to +140 °F]
	Storage, transport	-40 to +85 °C [-40 to +185 °F]
Humidity	Operation	95%, non-condensing as per IEC 61131-2
	Storage, transport	95%, non-condensing as per IEC 61131-2
Air pressure	Operation	≥ 795 hPa [11.5 psi] (altitude ≤ 2000 m) as per IEC 61131-2
	Storage, transport	≥ 700 hPa [10.2 psi] (altitude ≤ 3000 m) as per IEC 61131-2
Vibration resistance		5 Hz ≤ f ≤ 8.4 Hz: 3.5mm amplitude as per IEC 60068-2-6 8.4 Hz ≤ f ≤ 150 Hz: 1g acceleration as per IEC 60068-2-6
Shock resistance		15g over 11 ms, half sinewave, as per IEC 60068-2-27
Potential isolation	Test voltage	Max. 28.8V within one channel 500 VDC field/system (as per EN 60079-15:2017)
	Pollution severity level	2 (as per DIN EN 60664-1:2008)
	Overvoltage category	II (as per DIN EN 50178)
Approvals		CE, RoHS, UKCA, cULus E141197