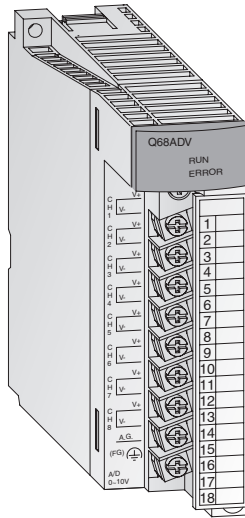


■ Analog Input Modules



**Detection of analog process signals**

The analog input modules convert analog process signals, for example pressure, flow or fill level, linearly into digital values, which are further processed by the Q CPU.

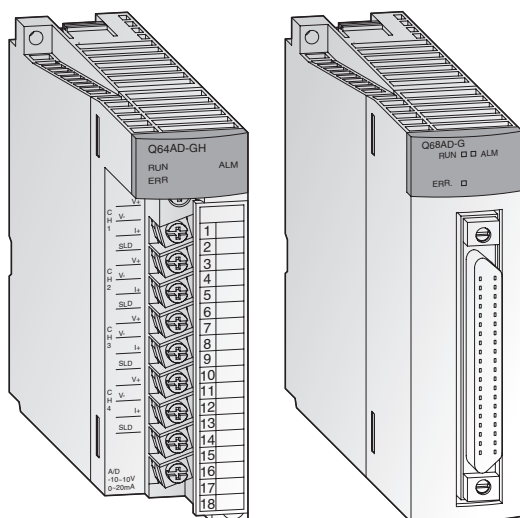
**Special features:**

- Up to 8 channels per module (Q68AD□) and up to 256 channels per system (Q CPU)
- Resolution of 0.83 mV and 3.33 μA (Q64AD)
- Conversion time of 80 μs/channel (Q68AD□)
- Calculation of average value over the time or measurement cycles can be configured
- Integrated logging function (Q64ADH)
- Flow amount measurement function (Q64ADH)
- Potential isolation between process and control by means of an optocoupler is a standard feature.
- All modules are provided with a removable terminal block fastened with screws..

Specifications	Q64AD	Q64ADH	Q68ADV	Q68ADI	
Input points	4	4	8	8	
Analog input	-10 V/+10 V (0 mA/+20 mA)	-10 V/+10 V (0 mA/+20 mA)	-10 V/+10 V	0 mA/+20 mA	
Resolution	16 bits binary (incl. sign)	16 bits binary (incl. sign)	16 bits binary (incl. sign)	16 bits binary (incl. sign)	
Load resistance	Voltage MΩ	1	1	1	
	Current Ω	250	250	250	
Max. input	Voltage V	±15	±15	±15	
	Current mA	±30	±30	±30	
I/O characteristics ①	Analog input	-10—+10 V	0—20 mA	-10—+10 V	0—20 mA
	Digital output	1/4000, 1/12000, 1/16000	1/4000, 1/8000, 1/12000	1/20000, 1/22500	1/4000, 1/12000, 1/16000
Max. resolution	Voltage input	2.5 mV	500 μV	2.5 mV	—
		1.25 mV	250 μV	5 mV	—
	Current input	0.83 mV	219 μV	1.25 mV	—
		—	200 μV	1 mV	—
		10 μA	1000 nA	—	0—20 mA
		5 μA	878 nA	—	4—20 mA
		3.33 μA	800 nA	—	—
Overall accuracy	±0.4 % (0–55 °C), ±0.1 % (20–30 °C)		±0.2 % (0–55 °C), ±0.1 % (20–30 °C)		
Max. conversion time	80 μs/channel (+160 μs with temperature drift compensation)				
Insulation method	Photocoupler insulation between output terminals and PC power for all modules.				
I/O points	16	16	16	16	
Connection terminal	All modules are fitted with a terminal block with 18 screw terminals.				
External power consumption	Not necessary for any module				
Applicable wire size	mm <sup>2</sup>	0.3–0.75	0.3–0.75	0.3–0.75	
Internal power consumption (5 V DC)	mA	630	520	640	
Weight	kg	0.14	0.18	0.19	
Dimensions (WxHxD)	mm	27.4x98x90	27.4x98x90	27.4x98x90	
<b>Order information</b>	Art. no.	129615	251331	129616	129617

① ±0.4 % (0–55 °C); ±0.1 % (20–30 °C)

■ Analog Input Modules



**Channel isolated and high resolution**

The analog input modules convert analog process signals into digital values with high accuracy. With the exception of the ME1AD8HAI-Q, all channels are isolated between each other and against the external power supply with high dielectric withstand voltage for both.

The ME1AD8HAI-Q provides a HART master function and can communicate with up to eight HART-enabled devices. The connection of standard analog input devices is also supported.

**Special features:**

- Potential isolation between each channel and between process and control is a standard feature.
- High resolution: 16/32 bit signed binary
- High accuracy with a reference accuracy of  $\pm 0.05\%$  and a temperature coefficient of  $\pm 71.4$  ppm/ $^{\circ}\text{C}$
- Integrated short circuit protection by limiting the input current
- Signal conditioning function for the Q62AD-DGH
- Q66AD-DG signal converter
- Power supply for 2-wire transmitter (Q66AD-GD, ME1AD8HAI-Q)
- A primary delay filter smoothes out the line of digital output values by a user-defined time constant
- Terminal block is fastened with screws and removable.

Specifications	Q62AD-DGH	Q64AD-GH	Q66AD-DG	Q68AD-G	ME1AD8HAI-Q	
Input points	2	4	6	8	8	
Analog input	+4 mA/+20 mA	-10 V/+10 V (0 mA/+20 mA)	0 mA/+4 mA/20 mA	-10 V/+10 V (0 mA/+20 mA)	0 mA/+4 mA/+20 mA	
Resolution	16/32 bits binary (incl. sign)	16/32 bits binary (incl. sign)	16 bits binary (incl. sign)	16 bits binary (incl. sign)	16 bits signed binary	
Load resistance	Voltage	MΩ	—	1	—	
	Current	Ω	250	250	250	250
Max. input	Voltage	V	±15	±15	—	
	Current	mA	±30	±30	±30	±30
I/O characteristics	Analog input	4–20 mA	-10–+10 V	0–20 mA	-10–+10 V; 0–20 mA	0–20 mA; 4–20 mA
	Digital output	0–32000 (16 bits) 0–64000 (32 bits)	-32000–+32000 (16 bits), -64000–+64000 (32 bits), 0–32000 (16 bits), 0–64000 (32 bits)	-96–+4095 (16 bits), -288–+12287 (16 bits)	-12288–+12287 (16 bits), -16384–+16383 (16 bits), -32768–+32767 (16 bits)	0–32000 (16 bits, 32 bits)
Max. resolution	Voltage input	—	0–10 V: 156.3 μV (32 bits), 312.6 μV (16 bits), 0–5 V: 78.2 μV (32 bits), 156.4 μV (16 bits), 1–5 V: 62.5 μV (32 bits), 125.0 μV (16 bits), -10–10 V: 156.3 μV (32 bits), 312.6 μV (16 bits)	—	0–10 V: 0.625 mV (16 bits), 0–5 V: 0.416 mV (16 bits), 1–5 V: 0.333 mV (16 bits), -10–10 V: 0.625 mV (16 bits), user defined: 0.333mV (16 bits)	—
	Current input	4–20 mA: 0.25 μA (32 bits), 0.50 μA (16 bits), user defined: 0.151 μA (32 bits), 0.303 μA (16 bits)	0–20 mA: 0.312 μA (32 bits), 0.625 μA (16 bits) 4–20 mA: 0.25 μA (32 bits), 0.50 μA (16 bits) user defined: 0.151 μA (32 bits), 0.303 μA (16 bits)	0–20 mA: 1.66 μA (16 bits) 4–20 mA: 1.33 μA (16 bits) user defined: 1.33 μA (16 bits)	0–20 mA: 1.66 μA (16 bits) 4–20 mA: 1.33 μA (16 bits) user defined: 1.33 μA (16 bits)	0–20 mA: 0.625 μA 4–20 mA: 0.50 μA
Overall accuracy	±0.05 %	±0.05 %	±0.1 %	±0.1 %	±0.15 %	
Temperature coefficient	±71.4 ppm/ $^{\circ}\text{C}$ (0.00714 %/ $^{\circ}\text{C}$ )	±71.4 ppm/ $^{\circ}\text{C}$ (0.00714 %/ $^{\circ}\text{C}$ )	±71.4 ppm/ $^{\circ}\text{C}$ (0.00714 %/ $^{\circ}\text{C}$ )	±71.4 ppm/ $^{\circ}\text{C}$ (0.00714 %/ $^{\circ}\text{C}$ )	—	
Max. conversion time	10 ms/2 channels	10 ms/4 channels	10 ms/channel	10 ms/channel	80 ms (channel independent)	
Insulation method	Photocoupler insulation between each channel	Photocoupler insulation between each channel	Transformer insulation between the input channels and between the channels and PLC power	Transformer insulation between the input channels and between the channels and PLC power	Photocoupler insulation between the channels and OLC power; No insulation between analog input channels	
I/O points	16	16	16	16	32	
Connection terminal	18-point removable terminal block with screws	18-point removable terminal block with screws	40-pin connector at the front	40-pin connector at the front	18-point removable terminal block with screws	
External power consumption	24 V DC, 360 mA	Not necessary	24 V DC, 360 mA	Not necessary	24 V DC, 300 mA	
Applicable wire size	mm <sup>2</sup>	0.3–0.75	0.3–0.75	0.3	0.51	
Internal power consumption (5 V DC)	mA	220	890	420	460	
Weight	kg	0.19	0.20	0.22	0.16	
Dimensions (WxHxD)	mm	27.4x98x90	27.4x98x90	27.4x102x130	27.4x102x90	
Order information	Art. no.	145036	143542	204676	204675	229238