# SIEMENS





Mounting flange AQM63.0 Symaro™

## Duct Temperature Sensors

### QAM2161.040 QAM2171.040

- · Active sensors for acquiring the air temperature in air ducts
- Operating voltage AC 24 V or DC 13.5...35 V
- Signal output DC 0...5 V, DC 0...10 V or 4...20 mA

#### Use

The QAM... duct temperature sensors are for use in ventilation and air conditioning plants as:

- Supply or extract air temperature sensors
- Limit sensors, e.g. for minimum limitation of the supply air temperature
- Reference sensors, e.g. for compensation of the room temperature as a function of the outside temperature
- Dew point temperature sensors
- Measuring sensors, e.g. for measured value indication or for connection to a building automation and control system

#### Type summary

Type reference	Probe length	Measuring range	Operating voltage	Output signal
QAM2161.040	0.4 m	−50+50 °C	AC 24 V $\pm 20$ % /	DC 05 V / DC 010 V
			DC 13.535 V	420 mA
				(3-wire)
QAM2171.040	0.4 m	−50+50 °C	DC 13.535 V	420 mA
				(2-wire)

	When ordering, please give name and type reference, e.g.: Duct temperature sensor <b>QAM2161.040</b> The sensor is supplied complete with mounting flange AQM63.0 and cable entry gland M16.			
Equipment combinations				
	All systems or devices capable of acquiring and handling the sensor's DC $05$ V, DC $010$ V or $420$ mA output signal.			
Function				
	The sensor acquires the air temperature via its sensing element whose resistance value changes as a function of the temperature. This change is converted to a DC 05 V, DC 010 V or 420 mA output signal, depending on the type of sensor. The output signal corresponds to the selected temperature range.			
Burden diagram (QAM2171.040)	Output signal, terminal I1			
Mechanical design				

The duct temperature sensor consists of housing, printed circuit board, connection terminals and probe.

The 2-sectional housing is comprised of base and removable cover (snap-on design). The measuring circuit and the setting element are located on the printed circuit board inside the cover, the connection terminals on the base.

Cable entry is made via the M16 cable entry gland (IP 54) supplied with the sensor which can be screwed into the housing. Probe and housing are rigidly connected. The sensor is designed for screwed or flanged mounting.

It can be fitted as follows:

- With the mounting flange supplied with the sensor (recommended), which is to be fitted to the sensor and then secured in accordance with the required immersion length, or
- Without mounting flange (making use of the maximum immersion length). For that propose, the housing has 4 holes for fitting the sensor directly to the air duct



Setting element QAM2161.040

M2171.040	Measuring range         1 2 3         0 0 0         0 0 0         0 0 0         0 0 0         12 3         0 0 0         0 0 0         0 0 0         12 3         0 0 0         0 0 0         12 mA         0 0 0         12 mA         0 0 0         12 mA				
	<ul> <li>The setting element is located inside the cover. It consists of 6 pins and a shorting plug. It is used to select the required measuring range and to activate the test function.</li> <li>The different plug positions have the following meaning</li> <li><i>For the temperature measuring range:</i> <ul> <li>Shorting plug in the left position (R1) = 050 °C</li> <li>Shorting plug in the mid position (R2) = -50+50 °C (factory setting)</li> <li>Shorting plug in the right position (R3) = -35+35 °C</li> </ul> </li> <li><i>For activating the test function:</i> <ul> <li>Shorting plug in the horizontal position: The values according to the table "Test function active" will be made available at the signal output.</li> </ul> </li> </ul>				
Fault QAM2161.040 QAM2171.040	In the event of fault, the output signal will reach 0 V (0 mA) after 60 seconds. In the event of fault, the output signal will reach 4 mA after 60 seconds				
Engineering notes					
	To power the sensor, a transformer for safety extra low-voltage (SELV) with separate windings for 100 % duty is required. When sizing and electrically protecting the transformer, local safety regulations must be observed. When sizing the transformer, the power consumption of the temperature sensor must be taken into consideration. For correct wiring, refer to the Data Sheets of the devices				
	with which the sensor is used.				
Cable routing and cable selection	When laying the cables, it must be observed that the longer the cables run side by side . and the smaller the distance between them, the greater the electrical interference. Twisted pair cables are required for the secondary supply lines and the signal lines.				
Mounting notes					
Mounting location	<ul> <li>For supply air temperature control: Downstream from the fan, if the fan is located after the last air handling unit. Otherwise, after the last air handling unit with a minimum distance of 0.5 m</li> <li>For extract air temperature control: Always upstream of the extract air fan</li> <li>As a limit sensor for the supply air temperature: As close as possible to the air outlet into the room</li> <li>For dew point control: Immediately after the spray trap of the air washer</li> <li>Manually bend the probe so that it lies diagonally across the duct or in equally spaced windings across the entire duct cross-section. The probe must not touch the duct wall. Mounting Instructions are printed on the packaging.</li> </ul>				
Mounting positions	Permitted:				





#### Disposal



This symbol or any other national label indicate that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation.

For additional details, refer to www.siemens.com/bt/disposal.

#### **Technical data**

Derivating voltage (QAM2161.040AC $24 V \pm 20\%$ , or $DC 13.535 V$ or AC/DC $24 V$ class 2 (US)Operating voltage (QAM2171.040)DC 13.535 V or DC $24 V$ class 2 (US)Prequency50/60 Hz at AC $24 V$ External supply line protection (EU)Fuse slow max. 10 A Or Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898 orPower consumption (QAM2171.040)At "U" output signal Max. <1.6 VAPower consumption (QAM2171.040)At "U" output signal Max. <2.0 VAPower consumption (QAM2171.040)At "U" output signal Max. <1.6 VAPerm. cable lengthsCopper cable 0.6 mm dia. Copper cable 1.5 mm² 300 mFunctional dataMeasuring range 050 °C (R1) = factory setting), 050 °C (R1). =35+35 °C (R3)Probe Probe Probe Probe Probe maxing accuracy in the range of $-25+25 °C$ $-50+50 °C-50+50 °C-50+50 °C or50 °C, max. ± 1 mA420 mA \cong -50+50 °C-50+50 °Cor -35+35 °C or 050 °C or-50+50 °Cor -35+35 °C or 050 °C$	Power supply	Power supply	Safety extra-low voltage (SELV)		
or AC/DC 24 V class 2 (US)         Operating voltage (QAM2171.040)       DC 13.535 V or DC 24 V class 2 (US)         Frequency       50/60 Hz at AC 24 V         External supply line protection (EU)       Fuse slow max. 10 A or Circuit breaker max, 13 A Characteristic B, C, D according to EN 60898 or         Power consumption (QAM2161.040)       At "0" output signal         Max. <1.6 VA		Operating voltage (QAM2161.040	AC 24 V ±20%, or DC 13.535 V		
ACUC 24 V bias 2 (US)         Operating voltage (QAM2171.040)       DC 13.535 V or         DC 24 V biass 2 (US)         Frequency       50/60 Hz at AC 24 V         External supply line protection (EU)       Fuse slow max. 10 A or         Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898 or         Power consumption (QAM2161.040)       At "U" output signal         Max. <1.6 VA					
Operating voltage (QAM2171.040)DC 13.535 V or DC 24 V class 2 (US)Frequency50/60 Hz at AC 24 VExternal supply line protection (EU)Fuse slow max. 10 A or Clicuit breaker max. 13 A Characteristic B, C, D according to EN 60898 orPower consumption (QAM2161.040)At"U" output signal Max. <1.6 VA			AC/DC 24 V class 2 (U	5)	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Operating voltage (QAM2171.040)	DC 13.535 V		
Frequency       50/60 Hz at AC 24 V         External supply line protection (EU)       Fuse slow max. 10 A         or       Characteristic B, C, D according to EN 60898         or       Power source with current limitation of max. 10 A         Power consumption (QAM2161.040)       At "U" output signal         Max.<1.6 VA			or DC 24 V class 2 (US)		
Introduction (EU)Surface Sour Max. 10 A or Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898 					
External supply line protection (E0) or the Main CDT Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898 or Power source with current limitation of max. 10 A Power consumption (QAM2161.040) At "U" output signal Max. <16 VA Max. <2.0 VA Power consumption (QAM2171.040) $\leq$ 1 VA Power consumption		Frequency	50/60 Hz at AC 24 V		
Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898 or Power source with current limitation of max. 10 A Power consumption (QAM2161.040) At "U" output signal Max. <1.6 VA Max. <2.0 VA Power consumption (QAM2171.040) $\leq$ 1 VA Power consumption (QAM2171.040) $\leq$ 0 m Copper cable 0.6 mm dia. 50 m Copper cable 1.5 mm <sup>2</sup> 150 m Copper cable 1.5 mm <sup>2</sup> 300 m Probe Probe Interval 15 mm Sensing element 0.4 m Minimum bending radius 10 mm Sensing element Pt 1000 Time constant 30 s at 2 m/s Dead time <1 s Measuring accuracy in the range of $-25+25$ °C $\pm$ 0.75 K $-50+50$ °C $\pm$ 0.9 K Output signal, linear (terminal X1: QAM2161.040) DC 05 V, DC 010 V $\cong$ -50+50 °C or $-35+35$ °C or 050 °C, max. ± 1 mA 420 mA $\cong$ -50+50 °C or 050 °C, max. ± 1 mA, max. 500 Ohm Output signal, linear (terminal 11: QAM2171.040) 420 mA $\cong$ -50+50 °C or $-35+35$ °C or 050 °C, max. ± 1 mA, max. 500 Ohm		External supply line protection (EU)	or		
$\begin{tabular}{ c c c c } \hline Power consumption (QAM2161.040) & At "U" output signal & "I" output signal & Max. <1.6 VA & Max. <2.0 VA & Power consumption (QAM2171.040) <1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) <1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) <1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) <1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) <1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) <1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) <1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) <1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) & 1 VA & Max. <2.0 VA & Power consumption (QAM2171.040) & 50 m & Copper cable 0.6 mm dia. & 50 m & Copper cable 0.6 mm dia. & 50 m & Copper cable 0.6 mm dia. & 50 m & Copper cable 1.5 mm^2 & 300 m & Measuring range & -5.0+50 °C (R2 = factory setting), & 050 °C (R1), -35+35 °C (R3) & Probe & Probe length & 0.4 m & Minimum bending radius & 10 mm & Sensing element & Pt 1000 & Time constant & 30 s at 2 m/s & Dead time & <1 s & Measuring accuracy in the range of & -25+25 °C & ±0.75 K & -50+50 °C & t0.9 K & Couput signal, linear (terminal X1: QAM2161.040) DC5 V, DC 010 V = -50+50 °C & or -35+35 °C or 050 °C, max. ±1 mA & 420 mA = -50+50 °C & 050 °C, max. ±1 mA & 420 mA = -50+50 °C & or -35+35 °C or 050 °C, max. ±1 mA & 420 mA = -50+50 °C & or -35+35 °C or 050 °C & or -35+55 °C or$			Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898 or Power source with current limitation of max. 10 A		
Power consumption (QAM2161.040)At "U" output signal Max. <1.6 VA"I" output signal Max. <2.0 VAPower consumption (QAM2171.040) $\leq 1$ VALine lengths for measuring signalPerm. cable lengthsCopper cable 0.6 mm dia.50 mCopper cable 1 mm²150 mCopper cable 1.5 mm²300 mFunctional dataMeasuring rangeProbe-50+50 °C (R2 = factory setting), 050 °C (R1), -35+35 °C (R3)ProbeProbeProbe length0.4 mMinimum bending radius10 mmSensing elementPt 1000Time constant30 s at 2 m/sDead time<1 s					
Max. <1.6 VAMax. <2.0 VAPower consumption (QAM2171.040) $\leq 1$ VALine lengths for measuring signalPerm. cable lengthsCopper cable 0.6 mm dia.50 mCopper cable 1 mm²150 mCopper cable 1.5 mm²300 mFunctional dataMeasuring rangeProbe-50+50 °C (R2 = factory setting), 050 °C (R1), -35+35 °C (R3)ProbeProbeProbe length0.4 mMinimum bending radius10 mmSensing elementPt 1000Time constant30 s at 2 m/sDead time<1 s		Power consumption (QAM2161.040)	At "U" output signal	"I" output signal	
Line lengths for measuring signal Power consumption (QAM2171.040) $\leq$ 1 VA Perm. cable lengths Copper cable 0.6 mm dia. 50 m Copper cable 1 mm <sup>2</sup> 150 m Copper cable 1.5 mm <sup>2</sup> 300 m Proper cable 1.5 mm <sup>2</sup> 300 m Probe Probe length 0.4 m Minimum bending radius 10 mm Sensing element Pt 1000 Time constant 30 s at 2 m/s Dead time <1 s Measuring accuracy in the range of $-25+25 \degree C$ $\pm 0.75 \ K$ $-50+50 \degree C$ or $-35+35 \degree C or 050 \degree C$ , max. $\pm 1 \ mA$ $420 \ mA \cong -50+50 \degree C or -35+35 \degree C or Output signal, linear (terminal 11: QAM2161.040) DC 05 V, DC 010 V \cong -50+50 \degree C r -35+35 \degree C or 050 \degree C, max. \pm 1 \ mA 420 \ mA \cong -50+50 \degree C Dutput signal, linear (terminal 11: QAM2171.040) 420 \ mA \cong -50+50 \degree C r -35+35 \degree C or 050 \degree C r -35+35 \degree C or 050 \degree C$			Max. <1.6 VA	Max. <2.0 VA	
Line lengths for measuring signalPerm. cable lengthsCopper cable 0.6 mm dia.50 mCopper cable 1 mm²150 mCopper cable 1.5 mm²300 mFunctional dataMeasuring rangeProbe $-50+50$ °C (R2 = factory setting), $050$ °C (R1), $-35+35$ °C (R3)ProbeProbe lengthProbe length0.4 mMinimum bending radius10 mmSensing elementPt 1000Time constant30 s at 2 m/sDead time<1 s		Power consumption (QAM2171.040)	≤1 VA		
measuring signalCopper cable 0.6 mm dia.50 mCopper cable 1 mm²150 mCopper cable 1.5 mm²300 mFunctional dataMeasuring range $-50+50$ °C (R2 = factory setting), $050$ °C (R1), $-35+35$ °C (R3)ProbeProbe length0.4 mMinimum bending radius10 mmSensing elementPt 1000Time constant30 s at 2 m/sDead time<1 s	Line lengths for	Perm. cable lengths			
Functional data Functional data Funct	measuring signal	Copper cable 0.6 mm dia.	50 m		
Functional data $\begin{array}{c c} \hline Copper cable 1.5 \ mm^2 & 300 \ mmmed \\ \hline Measuring range & -50+50 \ ^{\circ}C \ (R2 = factory setting), \\ 050 \ ^{\circ}C \ (R1), -35+35 \ ^{\circ}C \ (R3) \\ \hline \\ \hline \\ Probe \\ \hline \\ Probe \\ \hline \\ Probe \\ Probe length & 0.4 \ mmmmed \\ \hline \\ Minimum bending radius & 10 \ mmmmed \\ \hline \\ Sensing element & Pt \ 1000 \\ \hline \\ \hline \\ Time \ constant & 30 \ s \ at 2 \ m/s \\ \hline \\ Dead \ time & <1 \ s \\ \hline \\ Measuring \ accuracy in the range \ of \\ -25+25 \ ^{\circ}C & \pm 0.75 \ K \\ -50+50 \ ^{\circ}C & \pm 0.9 \ K \\ \hline \\ Output \ signal, linear \ (terminal \ X1: QAM2161.040) \ DC \ 05 \ V, \ DC \ 010 \ V \ = -50+50 \ ^{\circ}C \ or \ -35+35 \ ^{\circ}C \ or \\ 050 \ ^{\circ}C, \ max. \pm 1 \ mA \\ \hline \\ & 420 \ mA \ = -50+50 \ ^{\circ}C \ or \ -35+35 \ ^{\circ}C \ or \\ 050 \ ^{\circ}C, \ max. \pm 1 \ mA \ A20 \ mA \ = -50+50 \ ^{\circ}C \ or \ -35+35 \ ^{\circ}C \ or \ 050 \ ^{\circ}C \ or \ -35+35 \ ^{\circ}C \ or \ -35+55 \ ^{\circ}C \ or \ -35.$		Copper cable 1 mm <sup>2</sup>	150 m		
Functional dataMeasuring range $-50+50$ °C (R2 = factory setting), $050$ °C (R1), $-35+35$ °C (R3)ProbeProbeProbe length0.4 mMinimum bending radius10 mmSensing elementPt 1000Time constant30 s at 2 m/sDead time<1 s		Copper cable 1.5 mm <sup>2</sup>	300 m		
050 °C (R1), -35+35 °C (R3)         Probe       Probe length       0.4 m         Minimum bending radius       10 mm         Sensing element       Pt 1000         Time constant       30 s at 2 m/s         Dead time       <1 s	Functional data	Measuring range	−50+ 50 °C (R2 = factory setting),		
ProbeProbe length0.4 mMinimum bending radius10 mmSensing elementPt 1000Time constant30 s at 2 m/sDead time<1 s			050 °C (R1), -35+3	35 °C (R3)	
Probe length $0.4 \text{ m}$ Minimum bending radius10 mmSensing elementPt 1000Time constant $30 \text{ s at 2 m/s}$ Dead time<1 sMeasuring accuracy in the range of $-25+25 \degree \text{C}$ $-50+50 \degree \text{C}$ $25+25 \degree \text{C}$ $-50+50 \degree \text{C}$ Upper dealOutput signal, linear (terminal X1: QAM2161.040) DC $05 \text{ V}$ , DC $010 \text{ V} \cong -50+50 \degree \text{C}$ $050 \degree \text{C}$ , max. ± 1 mA $420 \text{ mA} \cong -50+50 \degree \text{C}$ $050 \degree \text{C}$ , max. ± 1 mA $420 \text{ mA} \cong -50+50 \degree \text{C}$ $050 \degree \text{C}$ , max. ± 1 mA $420 \text{ mA} \cong -50+50 \degree \text{C}$ $050 \degree \text{C}$ , max. ± 1 mA $420 \text{ mA} \cong -50+50 \degree \text{C}$ $050 \degree \text{C}$ r $-35+35 \degree \text{C}$ or $050 \degree \text{C}$ pr $-35+55 \degree \text{C}$ pr $-35+55$		Probe			
Minimum bending radius10 mmSensing elementPt 1000Time constant $30 \text{ s at 2 m/s}$ Dead time<1 s		Probe length	0.4 m		
Sensing elementPt 1000Time constant $30  ext{ s at 2 m/s}$ Dead time<1  ext{ s}		Minimum bending radius	10 mm		
Time constant       30 s at 2 m/s         Dead time       <1 s         Measuring accuracy in the range of $-25+25 \degree C$ $\pm 0.75 \ K$ $-50+50 \degree C$ $\pm 0.9 \ K$ Output signal, linear (terminal X1: QAM2161.040) DC 05 V, DC 010 V $\cong$ $-50+50 \degree C$ or $-35+35 \degree C \text{ or } 050 \degree C$ , max. $\pm 1 \ mA$ $420 \ mA \cong -50+50 \degree C \text{ or } 050 \degree C, max. \pm 1 \ mA 420 \ mA \cong -50+50 \degree C \text{ or } 050 \degree C         Output signal, linear (terminal 11: QAM2171.040)       420 \ mA \cong -50+50 \degree C         Burden       refer to "Function"   $		Sensing element Pt 1000			
Dead time       <1 s         Measuring accuracy in the range of $\pm 0.75 \text{ K}$ $-25+25 \degree \text{C}$ $\pm 0.75 \text{ K}$ $-50+50 \degree \text{C}$ $\pm 0.9 \text{ K}$ Output signal, linear (terminal X1: QAM2161.040) DC 05 V, DC 010 V $\cong$ $-50+50 \degree \text{C}$ or $-35+35 \degree \text{C}$ or $050 \degree \text{C}$ , max. $\pm 1 \text{ mA}$ $420 \text{ mA} \cong -50+50 \degree \text{C or } -35+35 \degree \text{C or } 050 \degree \text{C}$ , max. $\pm 1 \text{ mA}$ , max. $500 \text{ Ohm}$ Output signal, linear (terminal 11: QAM2171.040) $420 \text{ mA} \cong -50+50 \degree \text{C}$ or $-35+35 \degree \text{C or } 050 \degree \text{C}$ or $-35+35 \degree \text{C or } 050 \degree \text{C}$ Burden       refer to "Function"		Time constant 30 s at 2 m/s			
Measuring accuracy in the range of $-25+25 \degree C$ $\pm 0.75 \text{ K}$ $-50+50 \degree C$ $\pm 0.9 \text{ K}$ Output signal, linear (terminal X1: QAM2161.040) DC 05 V, DC 010 V $\cong$ -50+50 °C         or $-35+35 \degree C$ or $050 \degree C$ , max. $\pm 1 \text{ mA}$ $420 \text{ mA} \cong -50+50 \degree C$ or $-35+35 \degree C$ or         050 \degree C, max. $\pm 1 \text{ mA}$ , max. 500 Ohm         Output signal, linear (terminal 11: QAM2171.040)         420 mA $\cong -50+50 \degree C$ or $-35+35 \degree C$ or $050 \degree C$ Burden       refer to "Function"		Dead time	Dead time <1 s		
$\begin{array}{c} -25+25 \ ^{\circ}\text{C} & \pm 0.75 \ \text{K} \\ -50+50 \ ^{\circ}\text{C} & \pm 0.9 \ \text{K} \end{array}$ Output signal, linear (terminal X1: QAM2161.040) DC 05 V, DC 010 V $\cong$ -50+50 $^{\circ}\text{C}$ or -35+35 $^{\circ}\text{C}$ or 050 $^{\circ}\text{C}$ , max. $\pm 1 \ \text{mA}$ 420 mA $\cong$ -50+50 $^{\circ}\text{C}$ or -35+35 $^{\circ}\text{C}$ or 050 $^{\circ}\text{C}$ , max. $\pm 1 \ \text{mA}$ , max. 500 Ohm Output signal, linear (terminal I1: QAM2171.040) 420 mA $\cong$ -50+50 $^{\circ}\text{C}$ or -35+35 $^{\circ}\text{C}$ or 050 $^{\circ}\text{C}$ Burden refer to "Function"		Measuring accuracy in the range of			
$ \begin{array}{cccc} -50+50 \ ^{\circ}\text{C} & \pm 0.9 \ \text{K} \\ \hline \\ \hline \\ \text{Output signal, linear (terminal X1: QAM2161.040) DC 05 V, DC 010 V $\geq -50+50 \ ^{\circ}\text{C} \\ & \text{or} -35+35 \ ^{\circ}\text{C} \ \text{or} \ 050 \ ^{\circ}\text{C}, \ \text{max.} \pm 1 \ \text{mA} \\ & 420 \ \text{mA} \ ^{\circ}\ -50+50 \ ^{\circ}\text{C} \ \text{or} \ -35+35 \ ^{\circ}\text{C} \ \text{or} \\ & 050 \ ^{\circ}\text{C}, \ \text{max.} \pm 1 \ \text{mA}, \ \text{max.} \ 500 \ \text{Ohm} \\ \hline \\ $		−25+25 °C	±0.75 K		
Output signal, linear (terminal X1: QAM2161.040) DC 05 V, DC 010 V		−50+ 50 °C	±0.9 K		
420 mA		Output signal, linear (terminal X1: QAM2161.040) DC 05 V, DC 010 V ≙ −50+50 °C or −35+35 °C or 050 °C, max. ±1 mA			
Output signal, linear (terminal I1: QAM2171.040)       420 mA ≙ -50+50 °C         or -35+35 °C or 050 °C         Burden			420 mA	°C or – 35+35 °C or max. 500 Ohm	
or – 35+35 °C or 050 °C		Output signal, linear (terminal I1: QAM2171.040)	420 mA ≙ -50+50	°C	
Burden refer to "Function"			or -35+35 °C or 05	50 °C	
		Burden	refer to "Function"		

Protection class         III according to EN 60730-1           Electrical connections         Connection terminals for         1 x 2.5 mm² or 2 x 1.5 mm²           Cable entry gland (enclosed)         M 16 x 1.5           Environmental conditions         Climatic conditions         class 3K5           Temperature (housing)         -40+70 °C           Humidity (housing)         595 % r. h.           Transport         IEC 721-3-2           Climatic conditions         class 2K3           Temperature (nousing)         <95 % r. h.           Materials and colors         Probe         copper, polyolefine           Base         polycarbonate, RAL 7001 (silver-grey)           Cover         polycarbonate, RAL 7005 (light-grey)           Mounting flange         PA 66 (black)           Cable entry gland         PA, RAL 7035 (light-grey)           Mounting flange         PA 66 (black)           Cable entry gland         PA, RAL 7035 (right-grey)           Packaging         corrugated cardboard           Directives and Standards         Product standard         EN 60730-1           Mutomatic electrical controls for household and similar use         use           EU Conformity (CE)         CE111664en_C1*)         UL           UKCA         A5W00188725A*)	Degree of protection	Protection degree of housing	IP54 according to EN 60529	
Electrical connections         Connection terminals for         1 x 2.5 mm² or 2 x 1.5 mm²           Environmental conditions         Cable entry gland (enclosed)         M 16 x 1.5           Environmental conditions         Climatic conditions         class 3K 5           Temperature (housing)         -40+70 °C           Humidity (nousing)         595 % r. h.           Transport         IEC 721-3-2           Climatic conditions         class 2K3           Temperature         -25+70 °C           Humidity         <95 % r. h.		Protection class	III according to EN 60730-1	
Cable entry gland (enclosed)         M 16 x 1.5           Environmental conditions         Class 3K5           Climatic conditions         class 3K5           Climatic conditions         class 3K5           Temperature (housing)         -40+70 °C           Humidity (housing)         595 % r. h.           Transport         IEC 721-3-2           Climatic conditions         class 2K3           Temperature         -25+70 °C           Humidity         <95 % r. h.	Electrical connections	Connection terminals for	1 x 2.5 mm <sup>2</sup> or 2 x 1.5 mm <sup>2</sup>	
Environmental conditions         Operation         IEC 721-3-3           Climatic conditions         class 3K5           Climatic conditions         class 3K5           Temperature (housing)         -40+ 70 °C           Humidity (housing)         595 % r. h.           Transport         IEC 721-3-2           Climatic conditions         class 2K3           Temperature         -25+70 °C           Humidity         <95 % r. h.		Cable entry gland (enclosed)	M 16 x 1.5	
Climatic conditions     class 3K5       Temperature (housing)     -470 °C       Humidity (housing)     595 % r. h.       Transport     IEC 721-3-2       Climatic conditions     class 2K3       Temperature     -25+70 °C       Humidity     <95 % r. h.	Environmental conditions	Operation	IEC 721-3-3	
Temperature (housing)         -40+70 °C           Humidity (housing)         595 % r. h.           Transport         IEC 721-3-2           Climatic conditions         class 2K3           Temperature         -25+70 °C           Humidity         <95 % r. h.		Climatic conditions	class 3K5	
Humidity (housing)         595 % r. h.           Transport         IEC 721-3-2           Climatic conditions         class 2K3           Temperature         -25+70 °C           Humidity         <95 % r. h.		Temperature (housing)	−40+70 °C	
Transport     IEC 721-3-2       Climatic conditions     class 2K3       Temperature     -25+70 °C       Humidity     <95 % r. h.		Humidity (housing)	595 % r. h.	
Climatic conditions     class 2K3       Temperature     -25+70 °C       Humidity     <95 % r. h.		Transport	IEC 721-3-2	
Temperature       -25+70 °C         Humidity       <95 % r. h.		Climatic conditions	class 2K3	
Humidity       <95 % r. h. Mechanical conditions         Materials and colors       Probe       copper, polyolefine         Base       polycarbonate, RAL 7001 (silver-grey)         Cover       polycarbonate, RAL 7035 (light-grey)         Mounting flange       PA 66 (black)         Cable entry gland       PA, RAL 7035 (light-grey)         Packaging       corrugated cardboard         Directives and Standards       Product standard         EU Conformity (CE)       CET1762xx <sup>-1</sup> )         RCM Conformity       CE1T1864en_C1*)         UL       UL 873, http://ul.com/database         UKCA       A5W00188725A <sup>-1</sup> Environmental compatibility       The product environmental declaration CE1E1762 <sup>-1</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging         QAM2161.040       approx. 0.17 kg		Temperature	−25+70 °C	
Mechanical conditions         class 2M2           Materials and colors         Probe         copper, polyolefine           Base         polycarbonate, RAL 7001 (silver-grey)           Cover         polycarbonate, RAL 7035 (light-grey)           Mounting flange         PA 66 (black)           Cable entry gland         PA, RAL 7035 (light-grey)           Packaging         corrugated cardboard           Directives and Standards         Product standard           Product standard         EN 60730-1           Automatic electrical controls for household and similar use         use           EU Conformity (CE)         CE11762xx <sup>1</sup> )           UL         UL 873, http://ul.com/database           UKCA         A5W00188725A <sup>1</sup> )           Environmental compatibility         The product environmental declaration CE1E1762 <sup>1</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).           Weight         Incl. packaging           QAM2161.040         approx. 0.17 kg           QAM2171.040         approx. 0.17 kg		Humidity	<95 % r. h.	
Materials and colors         Probe         copper, polyolefine           Base         polycarbonate, RAL 7001 (silver-grey)           Cover         polycarbonate, RAL 7035 (light-grey)           Mounting flange         PA 66 (black)           Cable entry gland         PA, RAL 7035 (light-grey)           Packaging         corrugated cardboard           Product standard         EN 60730-1           Automatic electrical controls for household and similar use         use           EU Conformity (CE)         CET1762xx <sup>1</sup> )           RCM Conformity         CE1T1864en_C1 *)           UL         UL 873, http://ul.com/database           UKCA         A5W00188725A <sup>1</sup> )           The product environmental declaration CE1E1762 <sup>1</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).           Weight         Incl. packaging QAM2161.040         approx. 0.17 kg		Mechanical conditions	class 2M2	
Base         polycarbonate, RAL 7001 (silver-grey)           Cover         polycarbonate, RAL 7035 (light-grey)           Mounting flange         PA 66 (black)           Cable entry gland         PA, RAL 7035 (light-grey)           Packaging         corrugated cardboard           Product standard         EN 60730-1           Automatic electrical controls for household and similar use         use           EU Conformity (CE)         CET1762xx ')           RCM Conformity         CE1T1864en_C1*)           UL         UL 873, http://ul.com/database           UKCA         A55W00188725A ')           Environmental compatibility         The product environmental declaration CE1E1762'' contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).           Weight         Incl. packaging QAM2161.040         approx. 0.17 kg	Materials and colors	Probe	copper, polyolefine	
Cover         polycarbonate, RAL 7035 (light-grey)           Mounting flange         PA 66 (black)           Cable entry gland         PA, RAL 7035 (light-grey)           Packaging         corrugated cardboard           Directives and Standards         Product standard           EN 60730-1         Automatic electrical controls for household and similar use           EU Conformity (CE)         CET1762xx ')           RCM Conformity         CET1762xx ')           WcA         A5W00188725A ')           Environmental compatibility         The product environmental declaration CE1E1762'' contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).           Weight         Incl. packaging           QAM2161.040         approx. 0.17 kg           QAM2161.040         approx. 0.17 kg		Base	polycarbonate, RAL 7001 (silver-grey)	
Mounting flange       PA 66 (black)         Cable entry gland       PA, RAL 7035 (light-grey)         Packaging       corrugated cardboard         Directives and Standards       Product standard         EU Conformity (CE)       CET1762xx ")         RCM Conformity       CE171864en_C1 *)         UL       UL 873, http://ul.com/database         UKCA       A5W00188725A ')         The product environmental declaration CE1E1762'' contains data on environmental benefit, disposal).         Weight       Incl. packaging         QAM2161.040       approx. 0.17 kg         QAM2171.040       approx. 0.17 kg		Cover	polycarbonate, RAL 7035 (light-grey)	
Cable entry gland       PA, RAL 7035 (light-grey)         Packaging       corrugated cardboard         Directives and Standards       Product standard       EN 60730-1         Automatic electrical controls for household and similar use       use         EU Conformity (CE)       CET1762xx ')         RCM Conformity       CE1T1864en_C1 *)         UL       UL 873, http://ul.com/database         UKCA       A5W00188725A ')         Environmental compatibility       The product environmental declaration CE1E1762'' contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging         QAM2161.040       approx. 0.17 kg         QAM2171.040       approx. 0.17 kg		Mounting flange	PA 66 (black)	
Packaging       corrugated cardboard         Directives and Standards       Product standard       EN 60730-1         Automatic electrical controls for household and similar use       automatic electrical controls for household and similar use         EU Conformity (CE)       CET1762xx ')         RCM Conformity       CET17864en_C1 *)         UL       UL 873, http://ul.com/database         UKCA       A5W00188725A ')         Environmental compatibility       The product environmental declaration CE1E1762') contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging QAM2161.040 approx. 0.17 kg QAM2171.040		Cable entry gland	PA, RAL 7035 (light-grey)	
Directives and Standards       Product standard       EN 60730-1         Automatic electrical controls for household and similar use       use         EU Conformity (CE)       CET1762xx <sup>1</sup> )         RCM Conformity       CE1T1864en_C1 *)         UL       UL 873, http://ul.com/database         UKCA       A5W00188725A <sup>1</sup> )         Environmental compatibility       The product environmental declaration CE1E1762 <sup>1</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging QAM2161.040 approx. 0.17 kg approx. 0.17 kg		Packaging	corrugated cardboard	
Automatic electrical controls for household and similar use         EU Conformity (CE)       CET1762xx <sup>1</sup> )         RCM Conformity       CE1T1864en_C1*)         UL       UL 873, http://ul.com/database         UKCA       A5W00188725A <sup>1</sup> )         Environmental compatibility       The product environmental declaration CE1E1762 <sup>1</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging QAM2161.040 approx. 0.17 kg approx. 0.17 kg	Directives and Standards	Product standard	EN 60730-1	
weight       Incl. packaging QAM2161.040       Incl. packaging QAM2171.040       Incl. packaging QAM2171.040       Incl. packaging QAM2171.040       Incl. packaging QAM2171.040       Incl. packaging QAM2171.040       Incl. packaging QAM2171.040			Automatic electrical controls for household and similar	
EU Conformity (CE)       CET1762xx <sup>*)</sup> RCM Conformity       CE1T1864en_C1*)         UL       UL 873, http://ul.com/database         UKCA       A5W00188725A <sup>*)</sup> Environmental compatibility       The product environmental declaration CE1E1762 <sup>*)</sup> contains data on environmentally compatible         product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging         QAM2161.040       approx. 0.17 kg         QAM2171.040       approx. 0.17 kg			use	
RCM Conformity       CE1T1864en_C1*)         UL       UL 873, http://ul.com/database         UKCA       A5W00188725A*)         Environmental compatibility       The product environmental declaration CE1E1762*) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging QAM2161.040 QAM2171.040		EU Conformity (CE)	CET1762xx <sup>*)</sup>	
UL       UL 873, <a href="http://ul.com/database">http://ul.com/database</a> UKCA       A5W00188725A *)         Environmental compatibility       The product environmental declaration CE1E1762*) contains data on environmentally compatible         product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging         QAM2161.040       approx. 0.17 kg         QAM2171.040       approx. 0.17 kg		RCM Conformity	CE1T1864en C1*)	
UKCA       A5W00188725A *)         Environmental compatibility       The product environmental declaration CE1E1762*) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging         QAM2161.040       approx. 0.17 kg         QAM2171.040       approx. 0.17 kg		UL	UL 873, <u>http://ul.com/database</u>	
Environmental compatibility       The product environmental declaration CE1E1762 <sup>°)</sup> contains data on environmentally compatible         product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).         Weight       Incl. packaging         QAM2161.040       approx. 0.17 kg         QAM2171.040       approx. 0.17 kg		UKCA	A5W00188725A *)	
Weight         Incl. packaging           QAM2161.040         approx. 0.17 kg           QAM2171.040         approx. 0.17 kg	Environmental compatibility	The product environmental declaration CE1E1762 <sup>*)</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).		
QAM2161.040         approx. 0.17 kg           QAM2171.040         approx. 0.17 kg	Weight	Incl. packaging		
QAM2171.040 approx. 0.17 kg		QAM2161.040	approx. 0.17 kg	
		QAM2171.040	approx. 0.17 kg	

\*) The documents can be downloaded from <a href="http://siemens.com/bt/download">http://siemens.com/bt/download</a>.

#### **Connection terminals**

G, G0 Operating voltage AC 24 V (SELV) or DC 13.5...35 V

G1 Operating voltage DC 13.5...35 V

1762G01

1762G02

- I1 Signal output 4...20 mA
- for measuring range –50...+50 °C (factory setting), 0...50 °C or –35...+35 °C X1 Signal output DC 0...5 V, DC 0...10 V, 4...20 mA
  - for measuring range –50...+50 °C (factory setting), 0...50 °C or –35...+35 °C



Dimensions in mm

Issued by Siemens Switzerland Ltd Smart Infrastructure Global Headquarters Theilerstrasse 1a CH-6300 Zug Tel. +41 58 724 2424 www.siemens.com/buildingtechnologies  $$\ensuremath{\mathbb{C}}\xspace$  Siemens Switzerland Ltd, 2004 – 2022 Technical specifications and availability subject to change without notice.