Baumer
Passion for Sensors

Operating Manual

CC60I.AIM / CC60I.RTD

IO-Link Hub

EN-US

V1 | 10/2/2024

1 About this document

1.1 Purpose and scope of application

This document instructs the technical staff of the machine manufacturer or machine operator on the safe use of the described devices.

It does not include instructions on the safe use of the machine in which the devices are integrated. Information on this is found in the operating manual of the machine.

- Read this chapter carefully before you start working with the device.
- Study the documentation carefully before device commissioning.
- Store the manual in a place that is accessible to all users at all times for the entire service life of the device.

Understanding the present manual requires general knowledge about automation technology. In addition, planning and using automation systems requires technical knowledge which is not included in this manual.

1.2 Labels in this manual

Identifier	Usage	Example
Dialog element	Indicates dialog elements.	Click the ***OK*** button.
Unique name	Indicates the names of products, files, etc.	*Internet Explorer* is not supported in any version.
`Code`	Indicates entries.	Enter the following IP address: `192.168.0.250`

1.3 Warnings in this manual

Warnings draw attention to potential personal injury or material damage. The warnings in this manual indicate different hazard levels:

Symbol	Warning term	Explanation
	**DANGER**	Indicates an imminent potential danger with high risk of death or serious personal injury if not being avoided.
	WARNING	Indicates potential danger with medium risk of death or (serious) personal injury if not being avoided.
	CAUTION	Indicates a danger with low risk, which could lead to light or medium injury if not avoided.
	NOTE	Indicates a warning of material damage.
	**INFO**	Indicates practical information and tips that enable optimal use of the devices.

1.4 Scope of delivery

Delivery includes:

- 1 x *CC60I* device
- 5 x product label
- General information sheet (11042373)

1.5 Trademarks

The present documentation uses the trademarks of the following companies and institutions:

IO-Link	c/o PROFIBUS User Organisation e.V. (PNO)

1.6 Specifications

Specification	Link
IO-Link Version 1.1.2 of 07.2013	www.io-link.com

INFO

The features of IO-Link specification V 1.1.3 are supported.

2 General information

Intended use

This product is a precision device and serves the detection of items, objects, or physical measurement variables and the preparation or provision of measured values as electric variables for the higher-level system.

Unless specifically labeled, this product may not be used in explosive environments.

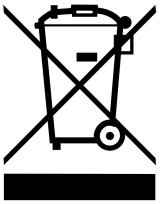
Commissioning

Assembly, installation, and calibration of this product may only be performed by a specialist.

Installation

Only use the fasteners and fastener accessories intended for this product for installation. Outputs not in use must not be wired. Unused wires of cable outputs must be insulated. Do not go below the permissible cable bending radii. Disconnect the system from power before the product is electrically connected. Use shielded cables to prevent electro-magnetic interference. If the customer assembles plug connections on shielded cables, then EMC-version plug connections should be used and the cable shield must be connected to the plug housing across a large surface area.

Disposal (environmental protection)



Used electrical and electronic devices may not be disposed of in household waste. The product contains valuable raw materials that can be recycled. Therefore dispose of this product at the appropriate collection point. For additional information visit www.baumer.com.

3 Safety

3.1 General safety instructions

⚠ DANGER

High electrical voltage in the machine/system.

Death or severe injuries resulting from electric shock.

a) While working on the machine/devices, comply with the five safety rules of electrical engineering.

Protection of persons and material assets

- According to DIN VDE 0105-100 - Operation of electrical systems - Part 100: General definitions

The 5 Safety Rules

Protect against *high electrical voltage*

1. Switch off the device.
2. Secure against unwanted switchon.
3. Ensure that each pole is not live respectively under voltage.
4. Grounding and short-circuiting.
5. Cover or block neighboring parts under voltage.

Qualified personnel

The appliance may only be installed, commissioned and operated by qualified personnel who have received safety training.

INFO

At all times, the instruction manual must be made available to the operator at the machine the device is operated at.

INFO

Any manipulation/modification of hardware and software only qualified *Baumer* personnel, except for firmware updates.

Intended use

The device has been designed and manufactured for:

- Industrial use.
- Operation within the specified ambient conditions.
- Use in the field.

INFO

Radio interference may occur if the device is used in domestic or mixed-use areas.

a) Observe the applicable standards for residential or mixed-use areas!

Predictive misuse

The device:

- must not be modified in design, technology or electrics.
- must only be deployed in the applications described in the present instruction manual and the related data sheets.
- must not be deployed as a safety-related device. It does not comply with the relevant standards. Any safety functions in the system are not ensured.
- only use the device in environments with corresponding IP-rating.
- only clean the device with oil-free compressed air and a leather cloth.
- do not use the device as a climbing aid.

4 Description

4.1 Device

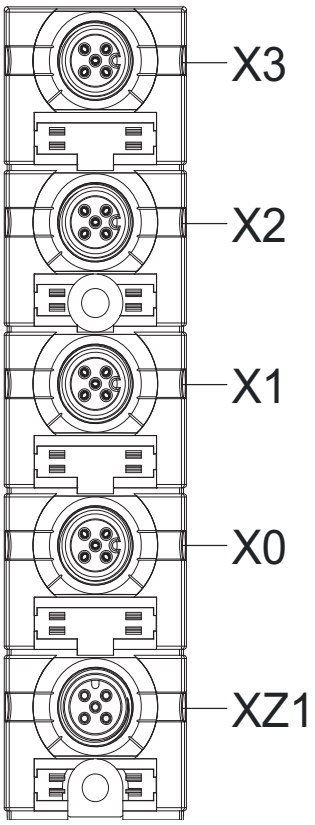
IO-Link Hub (*CC60I.AIM*)

- IO-Link hub for voltage and current measurement
- 30 mm plastic housing
- 1 x M12 IO-Link Class A
- 4 x M12 AI Multi (U/I)

IO-Link Hub (*CC60I.RTD*)

- IO-Link hub for resistance temperature detectors (RTD)
- 30 mm plastic housing
- 1 x M12 IO-Link Class A
- 4 x M12 AI RTD

4.2 Device structure



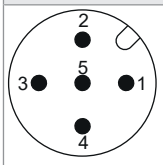
X0 ... X3 (AIM) Analog inputs U/I

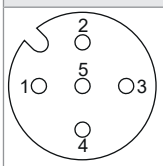
X0 ... X3 (RTD) Analog inputs RTD

XZ1 Module supply, IO-Link Class A

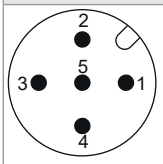
4.3 Pin assignment

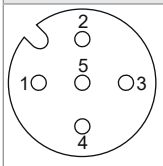
CC60I.AIM

IO-Link	XZ1 (M12 connector)	
	Pin 1	24 V US (L+)
	Pin 2	n.c.
	Pin 3	0 V US (L-)
	Pin 4	C/Q IO-Link
	Pin 5	n.c.

DIO	X0 ... X3 (mating M12)	
	Pin 1	24 V US
	Pin 2	AI
	Pin 3	0 V US
	Pin 4	n.c.
	Pin 5	n.c.

CC60I.RTD

IO-Link	XZ1 (M12 connector)	
	Pin 1	24 V US (L+)
	Pin 2	n.c.
	Pin 3	0 V US (L-)
	Pin 4	C/Q IO-Link
	Pin 5	n.c.

DIO	X0 ... X7 (mating M12)	
	Pin 1	CH+
	Pin 2	CH S+
	Pin 3	CH-
	Pin 4	CH S-
	Pin 5	n.c.

5 Technical data

5.1 CC60I.AIM

5.1.1 Electrical Data

Supply		
Operating voltage US		24 V DC
Voltage range US		18 ... 30 V DC
Current consumption	At idle	≤50 mA
Galvanic isolation		No

IO-Link		
Communication rate		COM3
Transmission rate		230.400 Bit/s
Bus protocol		IO-Link V1.1.2, compatible with IO-Link V1.1.3
IO-Link cycle time		≥1.6 ms
VendorID		0x015E
DeviceID		0x018AAD
Process data		10 bytes (inputs), 5 bytes (outputs)

Sensor supply +		
Terminal/mating		M12
Operating voltage		24 V DC
Power supply	Per port	≤0.2 A

Input (AI)		
Terminal		M12 female connector A-encoding
Sensor cable		<30 m
Input resistor	Voltage ranges Current ranges	50 kOhm 249 Ohm
Supported voltage and current ranges (MULT)		0 ... 10 V, -10 ... 10 V, 0 ... 5 V, -5 ... 5 V, 0 ... 20 mA, 4 ... 20 mA
Transformation principle	ADC	Sigma-Delta
Resolution	ADC	24 Bit
Filter	Interference frequency filter	Off, 50/60 Hz
Conversion time	Interference frequency filter Off Interference frequency filter Off Interference frequency filter 50/60 Hz (-95 dB)	2 ms 12 ms 240 ms

5.1.2 Measuring ranges

Nominal measuring range 0 ... 10 V		
Range of overdrive		-1.76 ... 11.76 V
Resolution		361.69 µV
Measuring accuracy	At 25 °C (full deflection)	<0.3 %
Drift		30 ppm/K

Nominal measuring range -10 ... 10 V		
Range of overdrive		-11.76 ... 11.76 V
Resolution		361.69 µV
Measuring accuracy	At 25 °C (full deflection)	<0.3 %
Drift		30 ppm/K

Nominal measuring range 0 ... 5V		
Range of overdrive		-0.88 ... 5.88 V
Resolution		180.85 µV
Measuring accuracy	At 25 °C (full deflection)	<0.3 %
Drift		30 ppm/K

Nominal measuring range -5 ... 5V		
Range of overdrive		-5.88 ... 5.88 V
Resolution		180.85 µV
Measuring accuracy	At 25 °C (full deflection)	<0.3 %
Drift		30 ppm/K

Nominal measuring range 0 ... 20V		
Range of overdrive		0 ... 23.51 mA
Resolution		723.38 nA
Measuring accuracy	At 25 °C (full deflection)	<0.4 %
Drift		60 ppm/K

Nominal measuring range 0 ... 20V		
Range of overdrive		0 ... 23.51 mA
Resolution		723.38 nA
Measuring accuracy	At 25 °C (full deflection)	<0.4 %
Drift		60 ppm/K

Nominal measuring range 4 ... 20V		
Range of overdrive		1.19 ... 22.81 mA
Resolution		578.70 nA
Measuring accuracy	At 25 °C (full deflection)	<0.4 %
Drift		60 ppm/K

5.1.3 Ambient conditions

Climate		
Operating temperature		-25 °C ... +70 °C
Storage temperature		-40 °C ... +85 °C
Installation hight	Above sea level	≤3000 m
Relative humidity		≤95 %

Mechanical		
Oscillation test	EN 60068 Part 2-6	5 ... 500 Hz; constant amplitude 1 mm; acceleration 15 g
Shock test	EN 60068 Part 2-27	50 g, duration 11 ms

Electrical safety		
Protection	IP protection rating is not considered in UL approval	IP65, IP67, IP68
Protection rating		III
Level of contamination		2

EMC emission		
Radiated interference E-field	EN 61000-6-3 Emission	QP: 42-35 dBµV/m@ 30 ... 230 MHz QP: 42 dBµV/m@ 230 MHz ... 1 GHz PK: 70 dB, AV: 50 dB@ 1 ... 2 GHz

EMC-immunity		
Discharge of static electricity (housing)	EN 61000-4-2	±4 kV @ contact ±8 kV @ air
Electromagnetic HF fields (housing)	EN 61000-4-3 RF-Field	10 V/m
Fast transient electrical disturbance variables (burst) DC inputs/outputs	EN 61000-4-4	±2 kV IO-Link (5 kHz) ±1 kV AIN (5 kHz, 100 kHz)
Magnetic field	EN 61000-4-8	30 A/m @ 50 Hz
Variables of conducted disturbance, HF fields	EN 61000-4-6, irregular	10 V

5.1.4 Protection

Device protection		
Overvoltage protection		Yes
Overload protection device supply	To be ensured by load circuit monitoring	Yes
Inverse-polarity protection device supply		Yes
Short-circuit protection sensor supply		Electronically
Protective circuit input	Internal	Suppressor diode

5.1.5 Product reliability

Product reliability		
MTTF	SN 29500 (at 40 °C and rated data)	216 years

5.1.6 Mechanical data

Material data		
Housing material		Valox 553 black
Flame resistance	IEC 60695-2-1	

Mounting data		
Weight	Net	150 g
Dimensions	L x W x H	126 x 29.78 x 34.3 mm

5.1.7 Conformity, Approvals

Conformity, Approvals		
Product standard	EN 61131-2 Programmable Logic Controllers Part 2	Compliant
CE	2014/30/EU 2011/65/EU	Compliant
UKCA		Compliant
EMC	2014/30/EU	Compliant
REACH	No. 1907/2006	SVHC List
WEEE	2012/19/EU	Compliant
ULus		E201820
RoHS	2011/65/EU & 2015/863	Exception 6c&7a
China RoHS	SJ/T 11364-2014	25 EPUP

Hazardous substance (有害物質)						
Part Name 零件名稱	Lead (Pb) 铅	Mercury (Hg) 汞	Cadmium (Cd) 镉	Hexavalent Chromium (Cr (VI)) 六价铬	Polybrominated biphenyls (PBB) 多溴联苯	Polybrominated diphenyl ethers (PBDE) 多溴联苯醚
Component part PCB 组件部分 印刷电路板	X	O	O	O	O	O
Connection Terminal/ Screws 接线端子 / 拧	X	O	O	O	O	O

O: Indicates that the content of the harmful substance in all homogeneous materials of the component part is below the limit defined in GB/T 26572.

O: 表明該有害物質在組成部分的所有均質材料的含量低於按GB/ T26572定義的限制。

X: Indicates that the content of the harmful substance in at least one homogeneous material of the component part exceeds the limit defined in GB/T 26572.

X: 表示該有害物質在組成部分中的至少一個均質材料的含量超過按GB / T26572定義的限制。

5.2 CC60I.RTD

5.2.1 Electrical Data

Supply		
Operating voltage US		24 V DC
Voltage range US		18 ... 30 V DC
Current consumption	At idle	≤50 mA
Galvanic isolation		No

IO-Link		
Communication rate		COM3
Transmission rate		230.400 Bit/s
Bus protocol		IO-Link V1.1.2, compatible with IO-Link V1.1.3
IO-Link cycle time		≥1.6 ms
VendorID		0x015E
DeviceID		0x018AAB
Process data		10 bytes (inputs), 5 bytes (outputs)

Input (AI)		
Terminal		M12 female connector A-encoding
Connection technology		2-, 3- and 4-wire
Sensor cable		<30 m, shielded
Line resistance		<50 Ohm/conductor
Supported sensors (RTD)		PT100, PT100 climate, PT200, PT500, PT1000, NI100, NI120, NI200, NI500, NI1000
Resistance measurement		0 Ω ... 3 kΩ
Sensor current		ca. 250 µA
Transformation principle	ADC	Sigma-Delta
Resolution	ADC	24 Bit
Conversion time	Interference frequency filter Off Interference frequency filter Off Interference frequency filter 50/60 Hz (-95 dB)	12 ms 50 ms 120 ms

5.2.2 Measuring ranges

PT100, PT200, PT500, PT1000		
Nominal measuring range		-200 °C ... +850 °C
Range of overdrive		-220 °C ... +1000 °C
Resolution		0.1 °C
Measuring accuracy	At 25 °C (full deflection)	<0.15 %
Drift		40 ppm/K

PT100 climate		
Nominal measuring range		-120 °C ... +130 °C
Range of overdrive		-145 °C ... +155 °C
Resolution		0.01 °C
Measuring accuracy	At 25 °C (full deflection)	<0.2 %
Drift		60 ppm/K

NI100, NI120, NI200, NI500, NI1000		
Nominal measuring range		-60 °C ... +250 °C
Range of overdrive		-100 °C ... +300 °C
Resolution		0.1 °C
Measuring accuracy	At 25 °C (full deflection)	<0.2 %
Drift		20 ppm/K

Ohm 0 Ω ... 3000 Ω		
Nominal measuring range		0 Ω ... 3000 Ω
Range of overdrive		0 Ω ... 3527.67 Ω
Resolution		0.1085 Ω
Measuring accuracy	At 25 °C (full deflection)	<0.2 %
Drift		20 ppm/K

5.2.3 Ambient conditions

Climate		
Operating temperature		-25 °C ... +70 °C
Storage temperature		-40 °C ... +85 °C
Installation hight	Above sea level	≤3000 m
Relative humidity		≤95 %

Mechanical		
Oscillation test	EN 60068 Part 2-6	5 ... 500 Hz; constant amplitude 1 mm; acceleration 15 g
Shock test	EN 60068 Part 2-27	50 g, duration 11 ms

Electrical safety		
Protection	IP protection rating is not considered in UL approval	IP65, IP67, IP68
Protection rating		III
Level of contamination		2

EMC emission		
Radiated interference E-field	EN 61000-6-3 Emission	QP: 42 ... 35 dBµV/m @ 30 ... 230 MHz QP: 42 dBµV/m @ 230 MHz ... 1 GHz PK: 70 dB, AV: 50 dB @ 1 ... 3 GHz PK: 74 dB, AV: 54 dB @ 3 ... 6 GHz

EMC-immunity		
Discharge of static electricity (housing)	EN 61000-4-2	±4 kV @ contact ±8 kV @ air
Electromagnetic HF fields (housing)	EN 61000-4-3 RF-Field	10 V/m
Fast transient electrical disturbance variables (burst) DC inputs/outputs	EN 61000-4-4	±2 kV IO-Link (5 kHz) ±1 kV AIN (5 kHz, 100 kHz)
Variables of conducted disturbance, HF fields	EN 61000-4-6, irregular	10 V

5.2.4 Protection

Device protection		
Overvoltage protection		Yes
Overload protection device supply	To be ensured by load circuit monitoring	Yes
Inverse-polarity protection device supply		Yes

5.2.5 Product reliability

Product reliability		
MTTF	SN 29500 (at 40 °C and rated data)	216 years

5.2.6 Mechanical data

Material data		
Housing material		Valox 553 black
Flame resistance	IEC 60695-2-1	

Mounting data		
Weight	Net	150 g
Dimensions	L x W x H	126 x 29.78 x 34.3 mm

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REACH	No. 1907/2006	SVHC List
WEEE	2012/19/EU	Compliant
ULus		E201820
RoHS	2011/65/EU & 2015/863	Exception 6c&7a
China RoHS	SJ/T 11364-2014	25 EPUP

Hazardous substance (有害物質)						
Part Name 零件名稱	Lead (Pb) 铅	Mercury (Hg) 汞	Cadmium (Cd) 镉	Hexavalent Chromium (Cr (VI)) 六价铬	Polybrominated biphenyls (PBB) 多溴联苯	Polybrominated diphenyl ethers (PBDE) 多溴联苯醚
Component part PCB 组件部分 印刷电路板	X	O	O	O	O	O
Connection Terminal/ Screws 接线端子 / 拧	X	O	O	O	O	O

O: Indicates that the content of the harmful substance in all homogeneous materials of the component part is below the limit defined in GB/T 26572.
O: 表明該有害物質在組成部分的所有均質材料的含量低於按GB/ T26572定義的限制。
X: Indicates that the content of the harmful substance in at least one homogeneous material of the component part exceeds the limit defined in GB/T 26572.
X: 表示該有害物質在組成部分中的至少一個均質材料的含量超過按GB / T26572定義的限制。

6 Installation

6.1 Requirements

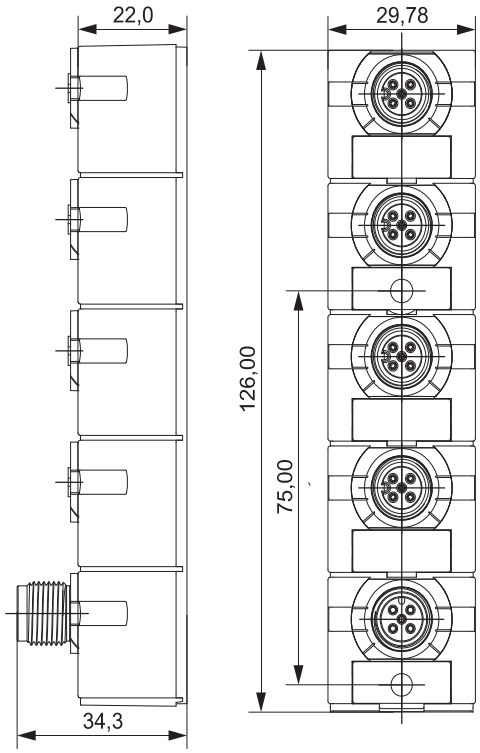
Installation requirements:

- Even mounting surface to avoid mechanical tension.
- Provide proper grounding.
- Suitable installation site in terms of vibration and shock load, temperature and humidity (see *Technical data [▶ 10]*).
- Protected to prevent connection cables from being torn off accidentally.

Observe the following installation requirements:

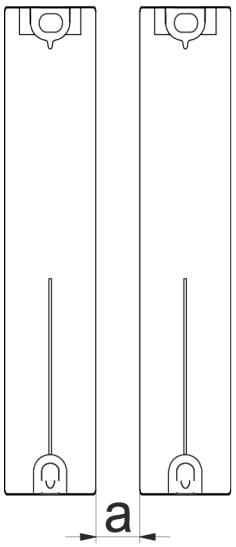
- Installation in the immediate vicinity of sensor/actuator
- Even mounting surface to avoid mechanical tension
- Earthed mounting surface for ring terminal earthing
- Short cable distance to all components
- Sufficient space to ease replacement and plug-in connections
- Appropriate installation site in terms of vibration and shock, temperature and humidity (see chapter Technical Specifications)
- Protected site to prevent connection cables from being torn off accidentally
- Diagnostic LEDs visible during operation

6.2 Dimensions



Ill. 1: Dimensions in mm

6.3 Mounting distance



Ill. 2: Distance in mm

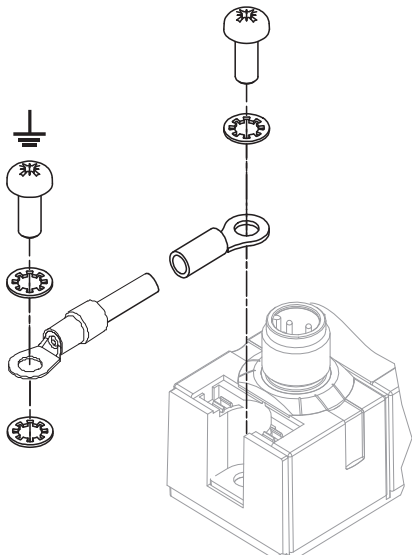
a | Straight connector: 5 mm
Angled connector: 50 mm

INFO
Minimum distance of 50 mm requried where using angled connectors.

6.4 Functional ground

For EMC compliance, a ring cable lug is required.

Input and output shield connection of is via the ring cable lug.



Ill. 3: Fastening the ring cable lug

Also see about this

Accessories [▶ 49]

6.5 Mounting the device

⚠ WARNING

Material damage due to incorrect installation.

Use fastening screws that are appropriate for the mounting surface.

a) Make sure the fastening screws are appropriate for use with the intended mounting surface.

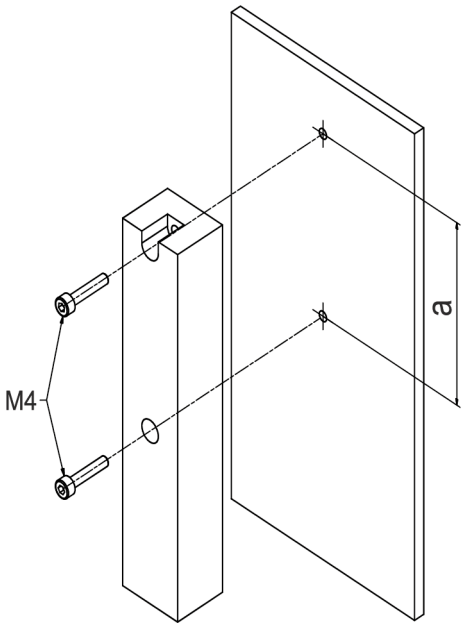
b) Ttighten the screws carefully. Observe the specified tightening torques.

⚠ WARNING

Material damage through improper use.

Do not use the devices as climbing aids. Devices may come off by improper use or might be damaged.

a) Install the device in a way that it cannot be abused as climbing aid.



Ill. 4: Mounting with two screws M4

a = 75 mm

When mounting the device, observe the order indicated below:

Instruction:

a) Align the housing.

b) Use a conductive screw to fasten the ring cable lug.

c) Slightly tighten the first M4 screw.

d) Slightly tighten the second M4 screw.

e) Tighten both M4 screws to the specified torque.

Also see about this

Functional ground [▶ 20]

7 Installation

7.1 Electrical installation of the device

⚠ DANGER

High electrical voltage in the machine/system.

Death or severe injuries resulting from electric shock.

a) Device connection must be performed by qualified personnel only.

b) While working on the machine/devices, comply with the five safety rules of electrical engineering.

Protective measures for connection

- Compliant to *IEC 60364 - Protection against electric shock.*.

⚠ CAUTION

Hot surface.

Minor personal injuries and damage to the device when contacting hot surfaces.

a) Wear suitable isolating gloves.

b) Only use connection cables that meet thermal requirements.

7.1.1 Connection lines

⚠ WARNING

Risk of fire due to short circuit.

Supply lines and/or devices may short circuit when damaged causing overheating and fire.

a) Provide intelligent current monitoring or fuse.

INFO

Maximum length of sensor and actuator cables is limited to 30 m.

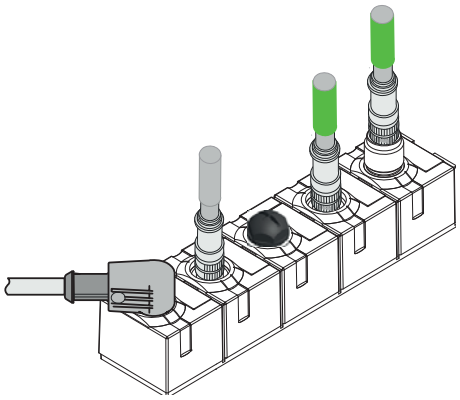
7.2 Ensuring tightness (IP65,67,68)

⚠ CAUTION

Leaky housing.

Risk of personal injury and material damage due to failure caused by ingress of conductive liquids.

a) Seal any male and female connectors not in use.



Ill. 5: Connection lines

M12	0.6 Nm		11238694

INFO

A large selection of connection cables can be found on the Baumer website https://www.baumer.com.

8 Operation

NOTICE

After writing the *Application Specific Tag* to the IO-Link hub, the hub would briefly interrupt IO-Link connection if the text is not identical to that stored in the hub.

8.1 LED indicator

The devices feature the following separate LED indicators:

- LED indicator for IO-Link and sensor supply US
- LED indicator for inputs/outputs

Either indicated by continuous or flashing LEDs.

8.1.1 LED indicator US and IO-Link

The device features a two-color LED for indicating IO-Link status and sensor supply status US. IO-Link status is indicated by the LED on green, the US status by the LED on red.

A mixture of flashing green and red may result in flashing amber in the event of overlapping.

Two-color LED indicator IO-Link and US

Indicator	Status	Description
Green	On continuous	IO-Link not in status *OPERATE*, no cyclical data communication present; sensor supply OK
Green	Flashing at 1 Hz	IO-Link in status *OPERATE*, cyclical data communication; sensor supply OK
Red	Flashing at 1 Hz	Error/warning
	Off	Device off, no IO-Link connection present

Tab. 1: Indicator IO-Link and US

Firmware update

Indicator	Status	Description
Green	On continuous	IO-Link in status *IDLE* Firmware update successfully executed
Green	Flashing at 1 Hz	IO-Link in status *PREOPERATE / OPERATE* Update is not yet being executed
Red	On continuous	Update failed
Green/red	Flashing at 2 Hz	IO-Link in status *PREOPERATE / OPERATE* Update is being executed
	Off	Device off, no IO-Link connection present

Tab. 2: Firmware update

NOTICE

Error-free operation no longer guaranteed at US <18 V.

8.1.2 LED indicator for inputs and outputs

Indicator	Status	Input voltage	Description	Logo value
Yellow	On continuous	24 V	channel at	1
Red	On continuous	0 V	Short circuit or overload DO	0
	Off	0 V	Device off or firmware update being executed	0

Tab. 3: LED indicator digital inputs/outputs

Error at input or output

In the event of error (short circuit, overload or power recovery) present at minimum one input or output, the LEDs of all input and output slots light up red.

8.2 IO-Link object directory

8.2.1 DPP (Direct Parameter Page)

ISDU index	Object name	Access	Length in bytes	Meaning / Default value	
				CC60I.RTD	CC60I.AIM
Identification					
0x0000	MasterCommand	W	1		
0x01	MasterCycleTime	R/W	1		
0x02	MinCycleTime	R	1		
0x03	M-SequenceCapability	R	1		
0x04	RevisionID	R/W	1		
0x05	ProcessDataIn	R	1		
0x06	ProcessDataOut	R	1		
0x07	VendorID 1 (MSB)	R	1	0x015E	
0x08	VendorID 2 (MSB)	R	1		
0x09	DeviceID 1 (Octet 2, MSB)	R/W	1	0x01	
0x0A	DeviceID 1 (Octet 1, MSB)		1	0x8A	
0x0B	DeviceID 1 (Octet 0, LSB)		1	0x018AAB	0x018AAD
0x000D	ProfileCharacteristic	R	6	0x00\0x31, \0x40\0x00	0x00\0x31, \0x40\0x00
0x000E	PDInputDescriptor	R	20	\\x03\x10\x00 \x03\x10\x10 \x03\x10\x20 \x03\x10\x30 \x01\x08\x40 \x02\x08\x48	
0x000F	PDOutputDescriptor	R	16	\x01\x08\x00 \x01\x08\x08 \x01\x08\x10 \x01\x08\x18 \x03\x08\x20	
0x0010	VendorName	R	64	Baumer	
0x0011	VendorText	R	64	www.baumer.com	
0x0012	ProductName	R	64	CC60I.RTD	CC60I.AIM
0x0013	ProductID	R	64	11261580	11261581
0x0014	ProductText	R	64	IOL/Analog 4-port Converter, AI RTD	IOL/Analog 4-port Converter, Multi U/I
0x0015	SerialNumber	R	16	Consecutive serial number, set by default	
0x0016	HardwareRevision	R	10	e.g. "01.00"	
0x0017	FirmwareRevision	R	09	e.g. "V.1.00.00"	
0x0018	ApplicationSpecificTag	R	3	User-specific name, e.g. "System 3 / Port 4"	

ISDU index	Object name	Access	Length in bytes	Meaning / Default value	
				CC60I.RTD	CC60I.AIM
0x0019	FunctionTag	R	32		
0x001A	LocationTag	R	32		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Meaning / Default value
0x0025	1	DetailedDeviceS-tatus	R	3	Octet 1: EventQualifier, Octet2, 3: EventCode
	...	...	R	3	Octet 1: EventQualifier, Octet2, 3: EventCode
	10	DetailedDeviceS-tatus	R	3	Octet 1: EventQualifier, Octet2, 3: EventCode
	Total length in bytes			30	

8.2.2 ISDU (Indexed Service Data Unit)

CC60I.AIM

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Meaning / Default value
0x0024		DeviceStatus	R	1	0: Device is working properly 1: Maintenance required 2: Beyond specification 3: Function test 4: Error 5 ... 255: Reserved

ISDU index	Object name	Access	Length in bytes	Significance	Default value
0x0040	Status: Power Supply Status US	R	1	Output of US status: ▪ 0x00 = OK ▪ 0x01 = undervoltage ▪ 0x02 = overvoltage	0
0x0041	Status: Power Supply Value US	R	02	Output of measured US voltage in increments of 0.1 V. Updated every 10 ms.	0
0x0044	Status: Internal Temperature Value °C	R	02	Output of internal device temperature from -25 °C to +70 °C in increments of 0.1 °C. Updated every 10 ms.	0
0x0045	Status: Internal Temperature Value °F	R	02	Output of internal device temperature from -13 °F to +158 °F in increments of 0.1 °F. Updated every 10 ms.	0
0x0060	Identification: Identification ID	R/W	01	Identification number for device identification. Value is provided in the input process data.	0x0000

ISDU index	Object name	Access	Length in bytes	Significance	Default value
0x0061	Identification: User Defined Serial Number	R/W	16	User-defined serial number. It may be used to ensure that the device will only be connected to an appropriate master.	0x0000
0x79	Data Format	R/W	1	Motorola = 0x00 Intel = 0x01	0x0000

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0062	1	IO-Link event code transmitted to master	R/W	1	Adjustable diagnostics: ▪ 0 = enabled ▪ 1 = disabled	0x0000
	2	US - diagnosed undervoltage	R/W	1		
	3	US - diagnosed overvoltage	R/W	1		
	4	US - LED status	R/W	1		
	5	Reserved	R/W	1		
	6	Reserved	R/W	1		
	7	Reserved	R/W	1		
	8	Reserved	R/W	1		
	9	TEMP - diagnosed low temperature	R/W	1		
	10	TEMP - diagnosed high temperature	R/W	1		
	11	TEMP - LED status	R/W	1		
	12	Minimum warning threshold	R/W	1		
	13	Maximum warning threshold	R/W	1		
	14	Cable break at sensor	R/W	1		
	15	Below measuring range	R/W	1		
	16	Measuring range exceeded	R/W	1		
	17	Short circuit in power supply	R/W	1		
	Total length in bytes			17		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0077	1	Analog Mode X0	R/W	1	Adjustable analog mode: ▪ 0x00 = disabled ▪ 0x01 = 0 ... 10 V ▪ 0x02 = -10 ... 10 V ▪ 0x03 = 0 ... 5 V ▪ 0x04 = -5 ... 5 V ▪ 0x05 = 0 ... 20 mA ▪ 0x06 = 4 ... 20 mA	0x01
	2	Analog Mode X1	R/W	1		
	3	Analog Mode X2	R/W	1		
	4	Analog Mode X3	R/W	1		
	Total length in bytes			4		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0087	0	Conversion time port X0 ... X3	R/W	1	Adjustable values: ▪ 0x00 = 2 ms ▪ 0x01 = 12 ms ▪ 0x02 = 240 ms	0x02
	Total length in bytes			1		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0088	1	Inputs: Lower warning threshold port X0	R/W	2	Adjustable values: -32 768 ... 32 767	-32 768
	2	Inputs: Lower warning threshold port X1	R/W	2		
	3	Inputs: Lower warning threshold port X2	R/W	2		
	4	Inputs: Lower warning threshold port X3	R/W	2		
	Total length in bytes			8		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0089	1	Inputs: Lower warning threshold port X0	R/W	2	Adjustable values: -32 768 ... 32 767	-32 768
	2	Inputs: Lower warning threshold port X1	R/W	2		
	3	Inputs: Lower warning threshold port X2	R/W	2		
	4	Inputs: Lower warning threshold port X3	R/W	2		
	Total length in bytes			8		

CC60I.RTD

ISDU index	Object name	Access	Length in bytes	Significance	Default value
0x0040	Status: Power Supply Status US	R	1	Output of US status: ▪ 0x00 = OK ▪ 0x01 = undervoltage ▪ 0x02 = overvoltage	0
0x0041	Status: Power Supply Value US	R	02	Output of measured US voltage in increments of 0.1 V. Updated every 10 ms.	0
0x0044	Status: Internal Temperature Value °C	R	02	Output of internal device temperature from -25 °C to +70 °C in increments of 0.1 °C. Updated every 10 ms.	0
0x0045	Status: Internal Temperature Value °F	R	02	Output of internal device temperature from -13 °F to +158 °F in increments of 0.1 °F. Updated every 10 ms.	0
0x0060	Identification: Identification ID	R/W	01	Identification number for device identification. Value is provided in the input process data.	0x0000
0x0061	Identification: User Defined Serial Number	R/W	16	User-defined serial number. It may be used to ensure that the device will only be connected to an appropriate master.	0x0000

ISDU index	Object name	Access	Length in bytes	Significance	Default value
0x79	Data Format	R/W	1	Motorola = 0x00 Intel = 0x01	0
0x7A	Temperature Format	R/W	1	Celsius = 0x00 Fahrenheit = 0x01	0

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0062	1	IO-Link event code transmitted to master	R/W	1	Adjustable diagnostics: ▪ 0 = enabled ▪ 1 = disabled	0
	2	US - diagnosed undervoltage	R/W	1		
	3	US - diagnosed overvoltage	R/W	1		
	4	US - LED status	R/W	1		
	5	Reserved	R/W	1		
	6	Reserved	R/W	1		
	7	Reserved	R/W	1		
	8	Reserved	R/W	1		
	9	TEMP - diagnosed low temperature	R/W	1		
	10	TEMP - diagnosed high temperature	R/W	1		
	11	TEMP - LED status	R/W	1		
	12	Minimum warning threshold	R/W	1		
	13	Maximum warning threshold	R/W	1		
	14	Cable break at sensor	R/W	1		
	15	Below measuring range	R/W	1		
	16	Measuring range exceeded	R/W	1		
	Total length in bytes			16		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0077	1	Analog Mode X0	R/W	1	Adjustable analog mode: ▪ 0x00 = disabled ▪ 0x01 = Pt100Clima ▪ 0x02 = Pt1000 ▪ 0x03 = Pt2000 ▪ 0x04 = Pt5000 ▪ 0x05 = Pt10000 ▪ 0x06 = NI1000 ▪ 0x07 = NI1200 ▪ 0x08 = NI2000 ▪ 0x09 = NI5000 ▪ 0x0A = NI10000 ▪ 0x0B = RES3K	0x01
	2	Analog Mode X1	R/W	1		
	3	Analog Mode X2	R/W	1		
	4	Analog Mode X3	R/W	1		
	Total length in bytes			4		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0078	1	Wire Mode X0	R/W	1	Adjustable values: ▪ 0x00 = 2-wire ▪ 0x01 = 3-wire ▪ 0x02 = 4-wire	0x02
	2	Wire Mode X1	R/W	1		
	3	Wire Mode X2	R/W	1		
	4	Wire Mode X3	R/W	1		
	Total length in bytes			4		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0087	0	Conversion time port X0 ... X3	R/W	1	Adjustable values: ▪ 0x00 = 2 ms ▪ 0x01 = 12 ms ▪ 0x02 = 240 ms	0x02
	Total length in bytes			1		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0088	1	Inputs: Lower warning threshold port X0	R/W	2	Adjustable values: -32 768 ... 32 767	-32 768
	2	Inputs: Lower warning threshold port X1	R/W	2		
	3	Inputs: Lower warning threshold port X2	R/W	2		
	4	Inputs: Lower warning threshold port X3	R/W	2		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
	Total length in bytes			8		

ISDU index	ISDU sub-index	Object name	Access	Length in bytes	Significance	Default value
0x0089	1	Inputs: Lower warning threshold port X0	R/W	2	Adjustable values: -32 768 ... 32 767	-32 768
	2	Inputs: Lower warning threshold port X1	R/W	2		
	3	Inputs: Lower warning threshold port X2	R/W	2		
	4	Inputs: Lower warning threshold port X3	R/W	2		
	Total length in bytes			8		

8.3 Diagnostic tools

8.3.1 Vendor-specific IO-Link events

NOTICE

In addition to the vendor-specific IO-Link events listed here, the standard events of the IO-Link specification are applicable as well.

CC60I.AIM

Event code	Event type	Description	Action
0x0000	Notification	No malfunction	–
0x1000	Error	General malfunction	Unknown error
0x4000	Error	Temperature error	Overload
0x4210	Warning	Permitted device temperature exceeded	Localize heat source
0x4220	Warning	Temperature below permitted device temperature	Insulate device
0x5000	Error	Device hardware error	Replace device
0x5110	Warning	Main supply overvoltage (UL1)	Check permitted voltage range
0x5111	Warning	Main supply undervoltage (UL1)	Check permitted voltage range
0x6000	Error	Device software error	Check firmware version
0x6320	Error	Parameter error	Check data sheet and parameters
0x6321	Error	Missing parameter	Check with data sheet
0x7700	Error	Cable break in a subordinate device	Check installation
0x7701	Error	Cable break in subordinate device 1	Check installation
0x7702	Error	Cable break in subordinate device 2	Check installation
0x7703	Error	Cable break in subordinate device 3	Check installation
0x7704	Error	Cable break in subordinate device 4	Check installation
0x7710	Error	Short circuit	Check installation
0x8C00	Error	Technology-specific error in the application	Reset device
0x8C10	Warning	Process value exceeding the valid range	Process value not safe
0x8C20	Error	Measuring range exceeded	Check application
0x8C30	Warning	Process value below the valid range	Check installation
0x8CD0	Error	Overload/short circuit in sensor supply at Port 0 Pin 1	Check installation
0x8CD1	Error	Overload/short circuit in sensor supply at Port 1 Pin 1	Check installation
0x8CD2	Error	Overload/short circuit in sensor supply at Port 2 Pin 1	Check installation

Event code	Event type	Description	Action
0x8CD3	Error	Overload/short circuit in sensor supply at Port 3 Pin 1	Check installation
0x8CE0	Error	Analog input threshold exceeded - Port 0	Check application
0x8CE1	Error	Analog input threshold exceeded - Port 1	Check application
0x8CE2	Error	Analog input threshold exceeded - Port 2	Check application
0x8CE3	Error	Analog input threshold exceeded - Port 3	Check application
0x8CF0	Warning	Analog input below threshold - Port 0	Check application
0x8CF1	Warning	Analog input below threshold - Port 1	Check application
0x8CF2	Warning	Analog input below threshold - Port 2	Check application
0x8CF3	Warning	Analog input below threshold - Port 3	Check application
0x8D30	Warning	Fallen below the user-defined warning threshold - Port 0	Check application
0x8D31	Warning	Fallen below the user-defined warning threshold - Port 1	Check application
0x8D32	Warning	Fallen below the user-defined warning threshold - Port 2	Check application
0x8D33	Warning	Fallen below the user-defined warning threshold - Port 3	Check application
0x8D40	Warning	User-defined maximum warning threshold exceeded - Port 0	Check application
0x8D41	Warning	User-defined maximum warning threshold exceeded - Port 1	Check application
0x8D42	Warning	User-defined maximum warning threshold exceeded - Port 2	Check application
0x8D43	Warning	User-defined maximum warning threshold exceeded - Port 3	Check application

Tab. 4: IO-Link events for CC60I.AIM

CC60I.RTD

Event code	Event type	Description	Action
0x0000	Notification	No malfunction	–
0x1000	Error	General malfunction	Unknown error
0x4000	Error	Temperature error	Overload
0x4210	Warning	Permitted device temperature exceeded	Localize heat source
0x4220	Warning	Temperature below permitted device temperature	Insulate device
0x5000	Error	Device hardware error	Replace device
0x5110	Warning	Overvoltage in main supply (US)	Check permitted voltage range
0x5111	Warning	Undervoltage in main supply (US)	Check permitted voltage range
0x6000	Error	Device software error	Check firmware version
0x6320	Error	Parameter error	Check data sheet and parameters
0x6321	Error	Missing parameter	Check with data sheet
0x7700	Error	Cable break in a subordinate device	Check installation
0x7701	Error	Cable break in subordinate device 1	Check installation
0x7702	Error	Cable break in subordinate device 2	Check installation
0x7703	Error	Cable break in subordinate device 3	Check installation
0x7704	Error	Cable break in subordinate device 4	Check installation
0x8C00	Error	Technology-specific error in the application	Reset device
0x8C10	Warning	Process value exceeding the valid range	Process value not safe
0x8C20	Error	Measuring range exceeded	Check application
0x8C30	Warning	Process value below the valid range	Check installation
0x8CE0	Error	Analog input threshold exceeded - Port 0	Check application
0x8CE1	Error	Analog input threshold exceeded - Port 1	Check application
0x8CE2	Error	Analog input threshold exceeded - Port 2	Check application
0x8CE3	Error	Analog input threshold exceeded - Port 3	Check application
0x8CF0	Warning	Analog input below threshold - Port 0	Check application
0x8CF1	Warning	Analog input below threshold - Port 1	Check application
0x8CF2	Warning	Analog input below threshold - Port 2	Check application
0x8CF3	Warning	Analog input below threshold - Port 3	Check application
0x8D30	Warning	Fallen below the user-defined warning threshold - Port 0	Check application
0x8D31	Warning	Fallen below the user-defined warning threshold - Port 1	Check application
0x8D32	Warning	Fallen below the user-defined warning threshold - Port 2	Check application

Event code	Event type	Description	Action
0x8D33	Warning	Fallen below the user-defined warning threshold - Port 3	Check application
0x8D40	Warning	User-defined maximum warning threshold exceeded - Port 0	Check application
0x8D41	Warning	User-defined maximum warning threshold exceeded - Port 1	Check application
0x8D42	Warning	User-defined maximum warning threshold exceeded - Port 2	Check application
0x8D43	Warning	User-defined maximum warning threshold exceeded - Port 3	Check application

Tab. 5: IO-Link events CC60I.RTD

8.4 Process data

8.4.1 Input data

Process data digital inputs

Bytes 0, 1	
Measured value	X0

Bytes 2, 3	
Measured value	X1

Bytes 4, 5	
Measured value	X2

Bytes 6, 7	
Measured value	X3

Byte 8				
Bit	7	6	5	4
Diagnostic tools	Global status	Diagnostics Parameter Write	Channel MSB	Channel Middle Bit

Byte 8				
Bit	3	2	1	0
Diagnostic tools	Channel LSB	Error or warning at input	Device temperature too high or too low	L+ (US) Overvoltage or undervoltage

Byte 9	
Bit	7 ... 0
Device identification	User-defined bits, e.g. for tool change 0 = not used 1 ... 255 = ID value read from object

8.4.1.1 Measured values for CC60I.AIM

Analog input U 0 ...10 V

Digits in		Measured value	Area	Diagnostic tools	Type
Dec.	**Hex.**	**0 ... 10 V**			
32511	7EFF	>11.7589 V	Overflow	Yes	Error
28512	6F60	<10.3087 V	Range of overdrive	Yes	Warning
27649	6C01	10 V +361.7 µV		None	None
27648	6C00	10.0000 V	Nominal range		
20736	5100	7.50 V			
13824	3600	5.00 V			
1	0001	361.7 µV			
0	0000	0 uV			
-1	FFFF	-361.7 µV	Range of underdrive		
-345	FEA7	>-0.1243 V		Yes	Warning
-4864	ED00	<-1.7593 V	Underflow	Yes	Error

Analog input U -10 ... +10 V

Digits in		Measured value	Area	Diagnostic tools	Type
Dec.	**Hex.**	**-10 ... 10 V**			
32511	7EFF	>11.7589 V	Overflow	Yes	Error
28512	6F60	<10.3087 V	Range of overdrive	Yes	Warning
27649	6C01	10 V +361.7 µV		None	None
27648	6C00	10 V	Nominal range		
20736	5100	7.50 V			
13824	3600	5.00 V			
1	0001	361.7 µV			
0	0000	0 uV			
-1	FFFF	-361.7 µV			
-13824	CA00	-5.00 V			
-20736	AF00	-7.50 V			
-27648	9400	-10.0000 V			
-27649	93FF	-10.0000 V -361.7 µV	Range of underdrive		
-28512	90A0	>-10.3087 V		Yes	Warning
-32512	8100	<-11.7593 V	Underflow	Yes	Error

Analog input U 0 ... 5 V

Digits in		Measured value	Area	Diagnostic tools	Type
Dec.	**Hex.**	**0 ... 5 V**			
32511	7EFF	>5.8795 V	Overflow	Yes	Error
28512	6F60	<5.1543 V	Range of overdrive	Yes	Warning
27649	6C01	5 V +180.85 µV		None	None
27648	6C00	5 V	Nominal range		
20736	5100	3.75 V			
13824	3600	2.5 V			
1	0001	180.85 µV			
0	0000	0 uV			
-1	FFFF	-180.85 µV	Range of underdrive		
-345	FEA7	>-0.0621 V		Yes	Warning
-4864	ED00	<-0.8796 V	Underflow	Yes	Error

Analog input U -5 ... +5 V

Digits in		Measured value	Area	Diagnostic tools	Type
Dec.	Hex.	-5 ... 5 V			
32511	7EFF	>5.8795 V	Overflow	Yes	Error
28512	6F60	<5.1543 V	Range of overdrive	Yes	Warning
27649	6C01	5V +180.85 µV		None	None
27648	6C00	5.0000 V	Nominal range		
20736	5100	3.75 V			
13824	3600	2.50 V			
1	0001	180.9 µV			
0	0000	0 uV			
-1	FFFF	-180.9 µV			
-13824	CA00	-2.50 V			
-20736	AF00	-3.75 V			
-27648	9400	-5.0000 V			
-27649	93FF	-5.0000 V -180.9 µV	Range of underdrive		
-28512	90A0	>-5.1543 V		Yes	Warning
-32512	8100	<-5.8795 V	Underflow	Yes	Error

Analog input I 0 ...20 mA

Digits in		Measured value	Area	Diagnostic tools	Type
Dec.	Hex.	0... 20 mA			
32511	7EFF	>23.5178 mA	Overflow	Yes	Error
28512	6F60	<20.6190 mA	Range of overdrive	Yes	Warning
27649	6C01	20.0000 mA +723 nA		None	None
27648	6C00	20.0000 mA	Nominal range		
20736	5100	15.0000 mA			
13824	3600	10.0000 mA			
1	0001	723 nA			
0	0000	0 mA			

INFO

At the analog input there are 0 ... 20 mA does not have an underflow range or underflow.

Analog input I 4 ... 20 mA

Digits in		Measured value	Area	Diagnostic tools	Type
Dec.	**Hex.**	**4 ... 20 mA**			
32511	7EFF	>22.8142 mA	Overflow	Yes	Error
28512	6F60	<20.6190 mA	Range of over-drive	Yes	Warning
27649	6C01	0.0000 mA +578.7 nA		None	None
27648	6C00	20.0000 mA	Nominal range		
20736	5100	16.0000 mA			
13824	3600	12.0000 mA			
1	0001	4 mA +578.7 nA			
0	0000	4 mA			
-1	FFFF	4 mA -578.7 nA	Range of un-derdrive		
-345	FEA7	<3.8 mA		Yes	Warning
-4864	ED00	>1.185 mA	Underflow	Yes	Error

8.4.1.2 Measured values for CC60I.RTD

Temperature PT100, PT200, PT500, PT1000

Digits in		Measured value	Area
Dec.	**Hex.**	**Temperature in °C**	
32767	7FFF	>1000.0	Overflow
10000	2710	1000.0	Range of overdrive
8501	2135	850.1	
8500	2134	850.0	Nominal range
1	0001	0.1	
0	0000	0.0	
-2000	F830	-200.0	
-2001	F82F	-200.1	Range of underdrive
-2200	F768	-220.0	
-32768	8000	<-220.0	Underflow

Temperature PT100 Climate

Digits in		Measured value	
Dec.	**Hex.**	**Temperature in °C**	**Area**
32767	7FFF	>155.0	Overflow
15500	3C8C	155.0	Range of overdrive
13001	32C9	130.01	
13000	32C8	130.00	Nominal range
1	0001	0.01	
0	0000	0.00	
-12000	D120	-120.00	
-12001	D11F	-120.01	Range of underdrive
-14500	C75C	-145.00	
-32768	8000	<-145.00	Underflow

Temperature NI100, NI120, NI200, NI500, NI1000

Digits in		Measured value	
Dec.	**Hex.**	**Temperature in °C**	**Area**
32767	7FFF	>300.0	Overflow
3000	0BB8	300.0	Range of overdrive
2501	09C5	250.1	
2500	09C4	250.0	Nominal range
1	0001	0.1	
0	0000	0.0	
-600	FDA8	-60.0	
-601	FDA7	-60.1	Range of underdrive
-1000	FC18	-100.0	
-32768	8000	<-100.0	Underflow

Resistor

Digits in		Measured value	
Dec.	**Hex.**	**R in Ohm**	**Area**
32767	7FFF	>3527.7	Overflow
32511	7EFF	3527.7	Range of overdrive
27649	6C01	3000.1	
27648	6C00	3000.0	Nominal range
1	0001	0.1085	
0	0000	0.0	

8.4.2 Output data

8.4.2.1 Output data CC60I.AIM

Alternatively to chapter *IO-Link object directory [▶ 26]*, sensor and connection type as well as conversion time can be parameterized via the output process data.

Byte 0			
Bit	7, 6	5, 4	3 ... 0
Description	Conversion time for X0, X1, X2 and X3	Reserved	Sensor type X0
Values	0b00 - 2 ms 0b01 - 12 ms 0b10 - 240 ms		0b0000 - disabled 0b0001 - 0 ... 10 V 0b0010 - -10 ... 10 V 0b0011 - 0 ... 5 V 0b0100 - -5 ... 5 V 0b0101 - 0 ... 20 mA 0b0110 - 4 ... 20 mA

Byte 1			
Bit	7, 6	5, 4	3 ... 0
Description	Reserved	Reserved	Sensor type X1
Values			0b0000 - disabled 0b0001 - 0 ... 10 V 0b0010 - -10 ... 10 V 0b0011 - 0 ... 5 V 0b0100 - -5 ... 5 V 0b0101 - 0 ... 20 mA 0b0110 - 4 ... 20 mA

Byte 2			
Bit	7, 6	5, 4	3 ... 0
Description	Reserved	Reserved	Sensor type X2
Values			0b0000 - disabled 0b0001 - 0 ... 10 V 0b0010 - -10 ... 10 V 0b0011 - 0 ... 5 V 0b0100 - -5 ... 5 V 0b0101 - 0 ... 20 mA 0b0110 - 4 ... 20 mA

Byte 3			
Bit	7, 6	5, 4	3 ... 0
Description	Reserved	Reserved	Sensor type X3
Values	0b00 - Motorola 0b01 - Intel		0b0000 - disabled 0b0001 - 0 ... 10 V 0b0010 - -10 ... 10 V 0b0011 - 0 ... 5 V 0b0100 - -5 ... 5 V 0b0101 - 0 ... 20 mA 0b0110 - 4 ... 20 mA

Byte 4	
Description	Process data command 0xFC: "Write parameter"

8.4.2.2 Output data CC60I.RTD

Byte 0			
Bit	7, 6	5, 4	3 ... 0
Description	Conversion time for X0, X1, X2 and X3	Connection type X0	Sensor type X0
Values	0b00 - 12 ms 0b01 - 50 ms 0b10 - 120 ms	0b00 - 2-wire 0b01 - 3-wire 0b10 - 4-wire	0b0000 - disabled 0b0001 - Pt100 Climate 0b0010 - Pt100 0b0011 - Pt200 0b0100 - Pt500 0b0101 - Pt1000 0b0110 - Ni100 0b0111 - Ni120 0b1000 - Ni200 0b1001 - Ni500 0b1010 - Ni1000 0b1011 - Resistance 0 ... 3 kΩ

Byte 1			
Bit	7, 6	5, 4	3 ... 0
Description	Temperature format for X0, X1, X2 and X3	Connection type X1	Sensor type X1
Values	0b00 - Celsius 0b01 - Fahrenheit	0b00 - 2-wire 0b01 - 3-wire 0b10 - 4-wire	0b0000 - disabled 0b0001 - Pt100 Climate 0b0010 – Pt100 0b0011 – Pt200 0b0100 – Pt500 0b0101 – Pt1000 0b0110 – Ni100 0b0111 – Ni120 0b1000 – Ni200 0b1001 – Ni500 0b1010 – Ni1000 0b1011 - Resistance 0 ... 3 kΩ

Byte 2			
Bit	7, 6	5, 4	3 ... 0
Description	Reserved	Connection type X2	Sensor type X2
Values		0b00 - 2-wire 0b01 - 3-wire 0b10 - 4-wire	0b0000 - disabled 0b0001 - Pt100 Climate 0b0010 – Pt100 0b0011 – Pt200 0b0100 – Pt500 0b0101 – Pt1000 0b0110 – Ni100 0b0111 – Ni120 0b1000 – Ni200 0b1001 – Ni500 0b1010 – Ni1000 0b1011 - Resistance 0 ... 3 kΩ

Byte 3			
Bit	7, 6	5, 4	3 ... 0
Description	Data format for X0, X1, X2 and X3	Connection type X2	Sensor type X3
Values	0b00 - Motorola 0b01 - Intel	0b00 - 2-wire 0b01 - 3-wire 0b10 - 4-wire	0b0000 - disabled 0b0001 - Pt100 Climate 0b0010 – Pt100 0b0011 – Pt200 0b0100 – Pt500 0b0101 – Pt1000 0b0110 – Ni100 0b0111 – Ni120 0b1000 – Ni200 0b1001 – Ni500 0b1010 – Ni1000 0b1011 - Resistance 0 ... 3 kΩ

Byte 4	
Description	Process data command 0xFC: "Write parameter"

INFO

The same output process data cannot be two times in a row. Instead, change the process data command byte from 0xfc to another value such as 0x00 and then reset to 0xfc.

Also see about this

IO-Link object directory [▶ 26]

9 Maintenance and cleaning

⚠ WARNING

Material damage due to defective or damaged appliances.

The function of the devices is not guaranteed.

a) Replace defective or damaged devices.

Cleaning the appliance:

- Only use oil-free compressed air or ethanol
- Only use non-fibrous materials (e.g. leather cloth)
- Do not use contact spray

10 Annex

10.1 Accessories

10.1.1 Tools

Designation	Art. no.
M12 installation wrench set SW 13	CAM12-W13-11238690

Ill. 6: Assembly wrench

INFO

PRODUCTS AND ACCESSORIES

You will encounter a large product selection at: https://www.baumer.com

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