MURR ELEKTRONIK

stay connected

ENGLISH MANUAL

For devices of the Modlight60 Pro series

Art.-No. 4000-76060-0000001 | 4000-76060-00000002

This document is valid for the following products:

Product designation	Art.-No.
Modlight60 Pro-RGB M12-4U-IOL	4000-76060-0000001
Modlight60 Pro-RGB M12-4U-B-IOL	4000-76060-0000002

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NOTE
Translation of the original instructions

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1 Introduction

Purpose of this document

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. For such information, please refer to the operating instructions of the machine.

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

You will need general knowledge about automation engineering in order to understand this manual. In addition, planning and using automation systems requires technical knowledge which is not contained in this manual.

Glossary
You can find explanations of the terms/abbreviations used at:
murrelektronik.com/products-industries/glossary/

1.1 Service and support

Sales and distribution

Our sales employees in the indoor and outdoor service and our technicians will support you at any time.

Customer Service Center (CSC)

Our staff of the Customer Service Center will help you with all questions concerning installation and start-up. They support you, for example, if you have problems with combining hardware and software products from different manufacturers with Murrelektronik products.

A number of support tools and measurement facilities are available for field bus systems and EMC interferences.

Please do not hesitate to call us at +49 (0) 7191 47-2050 or send an e-mail to support@murrelektronik.com

Service addresses

Murrelektronik GmbH has a policy of customer proximity, both at national and international level. Please visit our website to find your contact person:
www.murrelektronik.com

1.2 Scope of delivery

The scope of delivery includes:

1x Modlight60 Pro

1x Operating instructions – multilingual

1.3 Applicable documents

Document	Art.-No.
Operating instructions	4000-76060-0000001 (also applies to 4000-76060-0000002)
Product data	4000-76060-0000001
Product data	4000-76060-0000002

The other applicable documents are included in the scope of delivery or can be downloaded from shop.murrelektronik.com

1.4 Environmentally friendly disposal

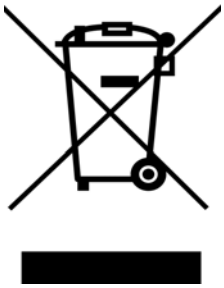
Comply with country-specific waste disposal regulations!

➔ Always dispose of scrap devices in compliance with the applicable country-specific regulations on waste disposal (e.g., the European Waste Code 16 02 14).

Scrap materials may only be sorted by qualified persons!

➔ Proceed with caution when dismantling the device since you could injure yourself.

➔ Sort the separated components into the correct recycling line.



Disposal

The product can be returned to Murrelektronik GmbH free of charge for disposal. The same is true for the original packaging and any batteries or power packs. Any units that have been contaminated with hazardous substances will not be accepted for repair or disposal.

Returns

➔ Label the product and the packaging with ***"For disposal"***.

➔ Package the product.

➔ Send the package to:

Murrelektronik GmbH

Falkenstraße 3

71570 Oppenweiler / GERMANY

We will make sure that the items are disposed of in accordance with German legislation. The most recent owner is responsible for transport to the return point until items arrive at their destination.

1.5 About this manual

1.5.1 Symbols

This document includes information and notes that must be observed for your own safety and to avoid injuries and equipment damage. They are marked as follows:

DANGER!

Immediate danger

➔ Failure to observe this warning involves an imminent risk of death or serious injuries.

WARNING!

Possible danger

➔ Failure to observe this warning can lead to death or serious injuries.

CAUTION!

Low-risk danger

➔ Failure to observe this warning can lead to mild or moderate injuries.

NOTICE

Possible material damage

➔ Failure to observe the warning may cause damage to the device and/or the system.

NOTE
Other technical information and notes of Murrelektronik GmbH.

RECOMMENDATION
Notes with this symbol are recommendations of Murrelektronik GmbH.

PRODUCTS AND ACCESSORIES
This symbol indicates accessories or product recommendations.

Instruction for use

➔ An arrow marks instructions.

➔ Read and observe the instructions.

1 | If they are numbered, it is absolutely necessary to follow them in the correct order.

2 | Read and observe the instructions.

1.5.2 Trademarks

Trademarks of the following companies and institutions are used in this documentation:

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

1.5.3 Specifications

Specification	Link
IO-Link Version 1.1.3	www.io-link.com

2 For your safety

- ➔ Read the chapter **For your safety** carefully.
- ➔ Only after that, you may work with the device.

2.1 General safety instructions

Qualified personnel

Only qualified and safety-trained personnel may assemble, commission and operate the device.

Target group

This document is intended for specialists in automation technology.

NOTE
Interventions in the hardware and software of the device dare,
if they are not described in this document,
only be carried out by qualified personnel from Murrelektronik GmbH.

WARNING!

Short circuits, electric shocks, or damage.

Improper installation can lead to electric shock, fire, falling objects, or dangerous malfunctions.

- ➔ Always de-energize the device before installing/removing it, before replacing a fuse, and during wiring.
- ➔ Replace the device if damaged.
- ➔ Do not use the device without the head cover or buzzer unit in place.
- ➔ Do not use the mounted device as a handle to climb on the machine. Risk of crushing when removing the machine cover.
- ➔ If the device is used for safety purposes, check it daily. To detect malfunctions, use the device in conjunction with other safety products.

NOTICE

Risk of material damage due to electrostatic discharge.

- ➔ When handling the device, take suitable protective measures against electrostatic discharge (ESD).
- ➔ Do not dismantle or remove during operation.
- ➔ Do not touch the internal terminals when mounting/removing the buzzer unit and the head cover.

2.2 Intended purpose

The power supply unit is designed and manufactured for:

- Industrial use.
- Installation and Operation within the specified environmental conditions.

2.3 Foreseeable misuse

The device:

- ➔ should only be used in technically perfect condition.
- ➔ must not be altered with regard to design, engineering, or electrical features.
- ➔ should only be used in the application fields described in this manual, in the technical data or in the operating instructions.
- ➔ should only be cleaned with oil-free compressed air and a leather cloth.
- ➔ must not be used as a climbing aid.

2.4 Warranty and liability

Warranty and liability claims cannot be made if:

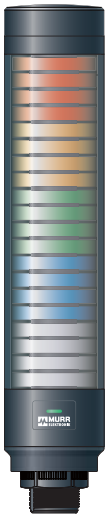
- the product is not used according to its designated use,
- damage is caused due to non-observance of the operating instructions,
- the personnel was/is not qualified.

3 Description

Art.-No. 4000-76060-0000001 Modlight60 Pro-RGB M12-4U-IOL

Product description

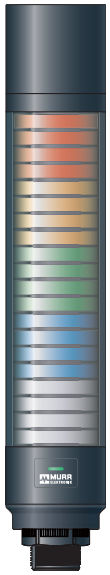
- Multicolor signal tower with IO-Link interface
- 20 RGB LED slices
- 21 adjustable colors
- 10 different light patterns
- Simple commissioning even without IODD and softwaretool



Art.-No. 4000-76060-0000002 Modlight60 Pro-RGB M12-4U-B-IOL

Product description

- Multi-color Signal Tower with IO-Link interface
- 20 RGB LED segments
- 21 different visual effects
- 10 different light patterns
- Buzzer with 8 selectable tones
- Simple commissioning even without IODD and softwaretool



3.1 Product Designation Code

The product designation provides information on the device function.

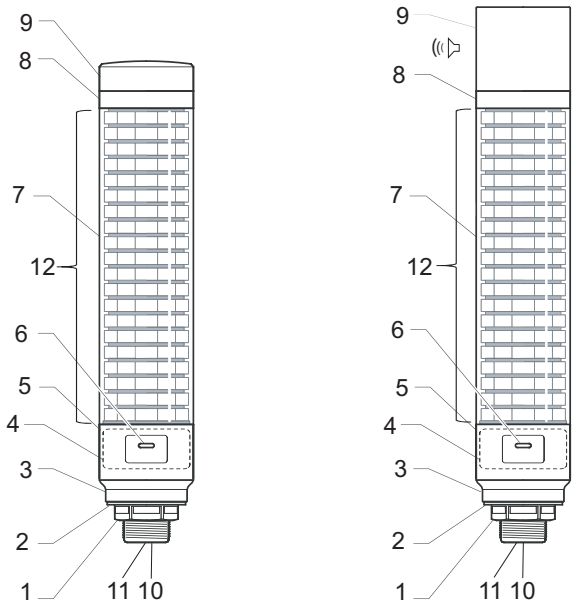
Art.-No.
4000-76060-0000001

Modlight60 Pro-RGB M12-4U-IOL	
Modlight60	■ Product family ■ 60 = 60 mm housing diameter
Pro-RGB	RGB LED segments
M12-4U	■ M12 = M12 male connector direct mounting ■ 4 = 4-pin ■ U = Mounting from below
IOL	IO-Link

Art.-No.
4000-76060-0000002

Modlight60 Pro-RGB M12-4U-B-IOL	
Modlight60	■ Product family ■ 60 = 60 mm housing diameter
Pro-RGB	RGB LED segments
M12-4U	■ M12 = M12 male connector direct mounting ■ 4 = 4-pin ■ U = Mounting from below
B	Buzzer
IOL	IO-Link

3.2 Device structure



	4000-76060-0000001	4000-76060-0000002
1	M30 x 1,5 mm nut	
2	Waterproof foil (t = 1)	
3	Holder	
4	Type plate	
5	Housing	
6	LED for IO-Link communication	
7	Outer lens	
8	Outer cover	
9	Head cover	Buzzer unit
10	NPT female thread 1/2"	
11	M12 male connector	
12	20 LED segments	

4 Technical Data

4.1 Electrical data

Art.-No. 4000-76060-0000001 Modlight60 Pro-RGB M12-4U-IOL

Power supply	
Operating voltage DC	24 V
Voltage range DC	18 ... 30 V
Current consumption*	200 mA
Current consumption max.	250 mA
Inrush current	30 A/ 0.1 ms

* - At operating voltage, with IO-Link communication
- All LED segments continuously illuminate in white, no dimming

Art.-No. 4000-76060-0000002 Modlight60 Pro-RGB M12-4U-B-IOL

Power supply	
Operating voltage DC	24 V
Voltage range DC	18 ... 30 V
Current consumption*	250 mA
Current consumption max.	300 mA
Inrush current	30 A/ 0.1 ms

* - At operating voltage, with IO-Link communication
- All LED segments continuously illuminate in white, no dimming
- Continuous tone, Volume: 100 %

4.2 Industrial communication

This product has 2 device IDs. When delivered, the device ID 0x100003 is stored.

After a reconfiguration, the last ID set remains active until the device is reset using system command 0x83 (131) Back to Box.

IO-Link	
IO-Link revision ID	1.1.3
IO-Link transmission rate	COM2 (38.4 kbit/s)
IO-Link cycle time min.	8 byte: 4.9 ms / 24 byte: 10 ms
Process data size input	2 byte
Process data size output	8/24 byte
Vendor ID	0x12F (303)
Device ID	0x10003 (1048579) PD Out 8 byte (default) 0x10004 (1048580) PD Out 24 byte

IO-Link, LED Control	
Operation Mode	Stack Mode/ Level Mode/ Slice Mode
Lighting Color	Total 21 colors
Lighting Control	Total 10 patterns
Dimming	0 % ... 100 %

LED/ Lighting pattern	
Continuous	On
Blinking, Gradation blinking	Flashing Rate 30/ 90/ 120 min^{-1}
Flash	On : Off = 1:10, Flashing Rate 60/ 90/ 120 min^{-1}

LED/ Luminous Intensity	
Red	2,020 mcd
Yellow	3,740 mcd
Green	6,230 mcd
Blue	2,200 mcd
White	3,740 mcd

LED for IO-Link communication	
IO-Link mode*	90 % On, 10 % Off
Demo mode	100 % On

* The LED can be switched On/ Off in the IO-Link Parameters item.

Art.-No. 4000-76060-0000002 Modlight60 Pro-RGB M12-4U-B-IOL

Buzzer Control	
Buzzer Style	8 styles
Volume	0 ... 100 % (10 % steps via process data, 1 % steps via parameterization)
Sound Pressure Level *	88 dB

* Buzzer sound No.4 is measured from the total circumfrence of the buzzer Unit at 1m. Volume: 100 %

4.3 Environmental characteristics

Climatic	
Ambient temperature min.	-20 °C
Ambient temperature max.	+50 °C
Storage temperature min.	-30 °C
Storage temperature max.	+60 °C
Relative humidity max. (Operating)	90 % (No condensation)
Relative humidity max. (Storage)	90 % (No condensation)
Mounting location	Indoor

4.3.1 Electromagnetic Compatibility (EMC)

Interference emission / Interference immunity	
IEC 61000-6-4	Conform
IEC 61000-6-2	Conform

4.4 Device protection

Electrical	
Insulation Resistance min.	5 MΩ at 500 V AC between live part and non-current carrying metallic part
Withstand Voltage	500 V DC for 1 min between live part and non-current carrying metallic part without breaking insulation

Mechanical	
Vibration Resistance	10 m/s^2, Direct mounting with M30 nut

Media	
Degree of protection (IP, EN 60529) in mounted state, upright 	IP65
Degree of protection (IP, EN 60529) in mounted state, upside down 	IP40

Art.-No. 4000-76060-0000001 Modlight60 Pro-RGB M12-4U-IOL

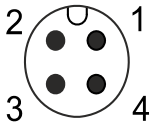
Product reliability	
MTBF (EN IEC 61709, SN 29500) at 40 °C	88,195 hours

Art.-No. 4000-76060-0000002 Modlight60 Pro-RGB M12-4U-B-IOL

Product reliability	
MTBF (EN IEC 61709, SN 29500) at 40 °C	87,225 hours

4.5 Mechanical data

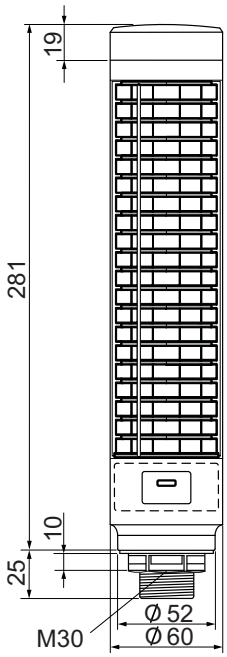
Material data	
Material (housing)	Polycarbonate
Color (housing)	Black, Transparent

M12 Socket 4-pole A-coded	Pin	IO-Link function
	1	+24 V ⎓ (L+)
	2	n.c.
	3	0 V ⎓ (L-)
	4	C/Q IO-Link

Assembly data	
Fastening method	Direct mounting with M30 Hexagon nut, tightening torque 4.5 Nm
Suitable for mounting type	Pipe fitting (1/2 inch NPT) ANSI / ASME B 1.20.1, tightening torque 2.25 Nm
Outside diameter M12 Connector and Cable	≤16 mm

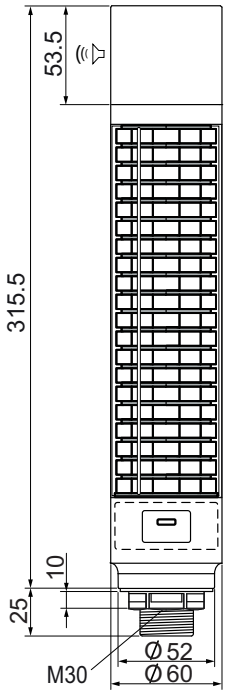
Art.-No. 4000-76060-0000001 Modlight60 Pro-RGB M12-4U-IOL

Assembly data	
Weight Net	580 g
Dimensions L x W x H	306 x 60 x 60 mm



Art.-No. 4000-76060-0000002 Modlight60 Pro-RGB M12-4U-B-IOL

Assembly data	
Weight Net	630 g
Dimensions L x W x H	340,5 x 60 x 60 mm



5 Mounting

5.1 Requirements

NOTICE

Device damage.

Improper installation can lead to device damage, ingress of liquids, or falling parts.

- The device is suitable for indoor use only.
- Do not use the device without the head cover or buzzer unit in place.
- Do not touch the internal terminals when mounting/removing the head cover and buzzer.
- Do not use excessive force when mounting or removing the head cover and buzzer.
- Make sure there is no play relative to the outer lens when removing and refitting the head cover and buzzer.
- Always use the supplied waterproof foil during device installation.

NOTICE

Requirements for a suitable installation location.

- Location providing a solid and level surface with minimal vibration.
- If the installation location is unavoidably irregular and needs to be waterproof, a sealing compound should be used between the device and the installation surface.

5.2 Mounting on a flat surface or on Wall mounting adapter

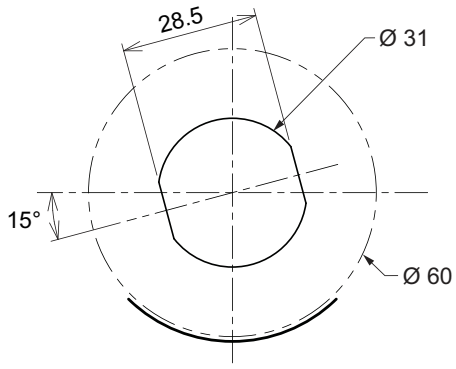


Fig. 5-1: Drilling template, dimensions in mm

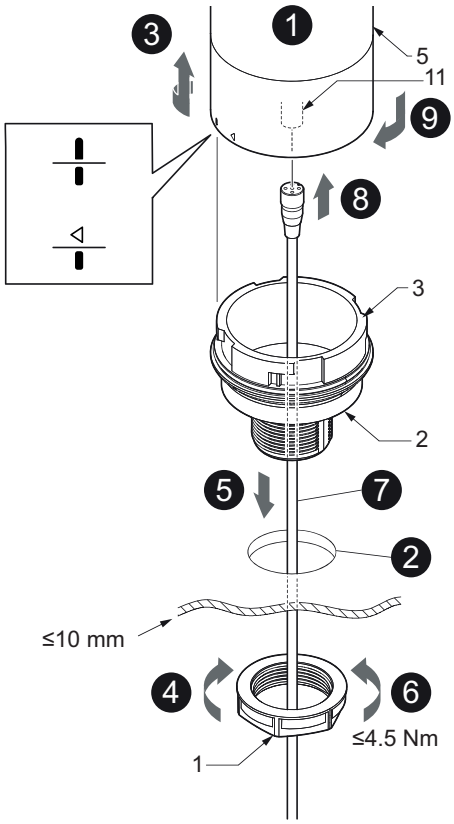


Fig. 5-2: Mounting sequence on a flat surface or on Wall mounting adapter (2, 3, 5, 11 see Chap. 3.2 "Device structure")

Mounting sequence ❶...❾ on mounting surface	
Check the mounting position of the product.	1
Make a mounting hole in the mounting position of the product.	2
Turn the body in the counterclockwise direction and remove the body from the bracket.	3
Remove the M30 nut from the bracket.	4
Attach the bracket to the mounting position.	5
Secure the bracket to the mounting position with the M30 nut.	6
Pass the M12 cable through.	7
Align the M12 cable alignment with the M12 connector alignment to attach the M12 cable.	8
Turn the body in the clockwise direction and mount the body to the bracket.	9

5.3 Mounting on a pipe

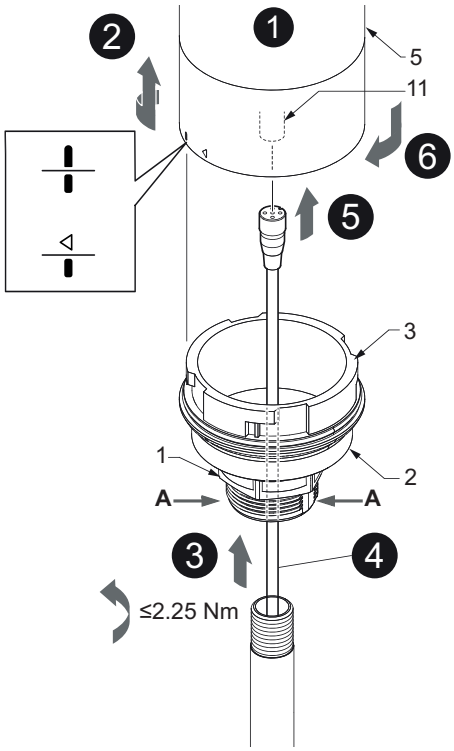


Fig. 5-3: Mounting sequence on 1/2 inch NPT pipe (2, 3, 5, 11 see 3.2 "Device structure")

Mounting sequence ❶...❻ on 1/2 inch NPT pipe	
Check the mounting position of the product and the NPT pipe.	1
Turn the body in the counterclockwise direction and remove the body from the bracket.	2
While holding part ‘A’, attach the Bracket to the NPT pipe.	3
Pass the M12 cable through.	4
Align the M12 cable alignment with the M12 connector alignment to attach the M12 cable.	5
Turn the body in the clockwise direction and mount the body to the bracket.	6

6 Installation

6.1 Electrical Installation of the device

WARNING!

Short circuits, electric shocks, or damage.

Improper installation can lead to short circuits, damage to the internal circuits, or other damage.

- Always de-energize the device before installing/removing it, before replacing a fuse, and when connecting it.
- Check for correct operating voltage.
- Do not pull on the cable.
- Check for proper wiring.

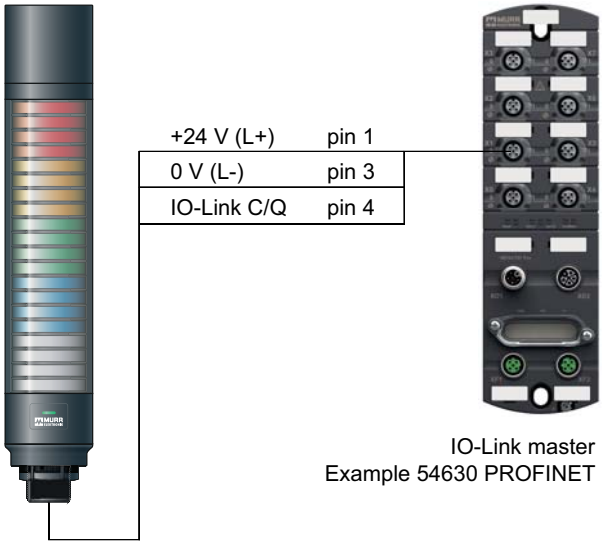


Fig. 6-1: M12 cable pin assignment

7 Configuration and parameterization

The Modlight60 Pro is configured as an IO-Link device of the IO-Link master. LED and buzzer can be controlled via the IO-Link master.

7.1 Process data

7.1.1 Input process data

The Modlight60 Pro provides the status of digital signal inputs via process data. If IO-Link communication starts while the inputs are not ready, IO-Link displays the status “PD invalid”.

Byte 0							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved							0 No Error 1 Operation mode error

Byte 1							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved				IO-Link Device State (Index 0x24) 0x00 Device is operating probably 0x01 Maintenance required 0x02 Out of specification 0x03 Functional check 0x04 Failure 0x05 ... 0x0F Reserved			

7.1.2 8 byte mode output process data – Stack mode

Byte 0							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 1 Speed		Stack 1 Pattern			Stack 1 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 1							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 2 Speed		Stack 2 Pattern			Stack 2 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 2							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 3 Speed		Stack 3 Pattern			Stack 3 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 3							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 4 Speed		Stack 4 Pattern			Stack 4 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 4							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 5 Speed		Stack 5 Pattern			Stack 5 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 5							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Buzzer Loudness				Buzzer Type			Buzzer
0000 Use Index 2001 (Default 100 %) 0001 10 % 0010 20 % 0011 30 % 0100 40 % 0101 50 % 0111 60 % 1000 70 % 1001 80 % 1010 90 % 1100 100 %				000 Use Index 2030 (Default Continuous) 001 Intermittent 010 High and Low tones 011 Sweep 100 Continuous (500ms On/500ms Off) 101 Intermittent (500ms On/500ms Off) 110 High and Low tones (500ms On/500ms Off) 111 Sweep (500ms On/500ms Off)			00 Off 01 On

Byte 6							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
User Preference Select Color Mode		Sync Mode		Function Mode			
00 Off 01 User Preference Select 1 10 User Preference Select 2 11 User Preference Select 3		Sync Start	Sync Trigger	0000 Use Index 810 0001 Stack Mode 0010 Level Mode 0100 Slice Mode 1000 ... 1111 Error			

Byte 7							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 1 ... 5			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 Off or use Index 2019 001 ... 101 20 Slices / x of Stacks)				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

7.1.3 8 byte mode output process data – Level mode

Word 0															
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved								7-bit mode 0 ... 100							
Reserved								8-bit mode 0 to 255							
Reserved								10-bit mode 0 to 1023							
Reserved								12-bit mode 0 to 4095							
Reserved								14-bit mode 0 to 16383							
16-bit mode 0 to 65535															

Byte 4 / Byte 3 / Byte 2															
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved in Level mode															

Byte 5							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Buzzer Loudness				Buzzer Type			Buzzer
0000 Use Index 2001 (Default 100 %) 0001 10 % 0010 20 % 0011 30 % 0100 40 % 0101 50 % 0111 60 % 1000 70 % 1001 80 % 1010 90 % 1100 100 %				000 Use Index 2030 (Default Continuous) 001 Intermittent 010 High and Low tones 011 Sweep 100 Continuous (500ms On/500ms Off) 101 Intermittent (500ms On/500ms Off) 110 High and Low tones (500ms On/500ms Off) 111 Sweep (500ms On/500ms Off)			0 Off 1 On

Byte 6							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
User Preference Select Color Mode		Sync Mode		Function Mode			
00 Off 01 User Preference Select 1 10 User Preference Select 2 11 User Preference Select 3		Sync Start	Sync Trigger	0000 Use Index 810 0001 Stack Mode 0010 Level Mode 0100 Slice Mode 1000 ... 1111 Error			

Byte 7							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Level Bit mode			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 7bit mode 001 8bit mode 010 10bit mode 011 12bit mode 100 14bit mode 101 16bit mode				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

7.1.4 8 byte mode output process data – Slice mode

Byte 1								Byte 0							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 16	Slice 15	Slice 14	Slice 13	Slice 12	Slice 11	Slice 10	Slice 9	Slice 8	Slice 7	Slice 6	Slice 5	Slice 4	Slice 3	Slice 2	Slice 1
0 Off 1 On															

Byte 4 / Byte 3								Byte 2							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved												Slice 20	Slice 19	Slice 18	Slice 17
												0 Off 1 On			

Byte 5							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Buzzer Loudness				Buzzer Type			Buzzer
0000 Use Index 2001 (Default 100 %) 0001 10 % 0010 20 % 0011 30 % 0100 40 % 0101 50 % 0111 60 % 1000 70 % 1001 80 % 1010 90 % 1100 100 %				000 Use Index 2030 (Default Continuous) 001 Intermittent 010 High and Low tones 011 Sweep 100 Continuous (500ms On/500ms Off) 101 Intermittent (500ms On/500ms Off) 110 High and Low tones (500ms On/500ms Off) 111 Sweep (500ms On/500ms Off)			0 Off 1 On

Byte 6							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
User Preference Select Color Mode		Sync Mode		Function Mode			
00 Off 01 User Preference Select 1 10 User Preference Select 2 11 User Preference Select 3		Sync Start	Sync Trigger	0000 Use Index 810 0001 Stack Mode 0010 Level Mode 0100 Slice Mode 1000 ... 1111 Error			

Byte 7							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved				Eco Mode	Color Dom.	Autoscale	Top/Down
				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

7.1.5 24 byte mode output process data – Stack mode

Byte 0							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 1 Speed		Stack 1 Pattern			Stack 1 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 1							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 2 Speed		Stack 2 Pattern			Stack 2 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 2							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 3 Speed		Stack 3 Pattern			Stack 3 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 3							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 4 Speed		Stack 4 Pattern			Stack 4 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 4							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 5 Speed		Stack 5 Pattern			Stack 5 Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Bytes 5 ... 20							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved							

Byte 21							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Buzzer Loudness				Buzzer Type			Buzzer
0000 Use Index 2001 (Default 100 %) 0001 10 % 0010 20 % 0011 30 % 0100 40 % 0101 50 % 0111 60 % 1000 70 % 1001 80 % 1010 90 % 1100 100 %				000 Use Index 2030 (Default Continuous) 001 Intermittent 010 High and Low tones 011 Sweep 100 Continuous (500ms On/500ms Off) 101 Intermittent (500ms On/500ms Off) 110 High and Low tones (500ms On/500ms Off) 111 Sweep (500ms On/500ms Off)			0 Off 1 On

Byte 22							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
User Preference Select Color Mode		Sync Mode		Function Mode			
00 Off 01 User Preference Select 1 10 User Preference Select 2 11 User Preference Select 3		Sync Start	Sync Trigger	0000 Use Index 810 0001 Stack Mode 0010 Level Mode 0100 Slice Mode 1000 ... 1111 Error			

Byte 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 1 ... 5			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 Off or use Index 2015 001 ... 101 20 Slices / x of Stacks)				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

7.1.6 24 byte mode output process data – Level mode

Word 0															
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved								7-bit mode 0 ... 100							
Reserved								8-bit mode 0 to 255							
Reserved								10-bit mode 0 to 1023							
Reserved								12-bit mode 0 to 4095							
Reserved								14-bit mode 0 to 16383							
16-bit mode 0 to 65535															

Byte 3 .. 20															
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved in Level mode															

Byte 21							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Buzzer Loudness				Buzzer Type			Buzzer
0000 Use Index 2001 (Default 100 %) 0001 10 % 0010 20 % 0011 30 % 0100 40 % 0101 50 % 0111 60 % 1000 70 % 1001 80 % 1010 90 % 1100 100 %				000 Use Index 2030 (Default Continuous) 001 Intermittent 010 High and Low tones 011 Sweep 100 Continuous (500ms On/500ms Off) 101 Intermittent (500ms On/500ms Off) 110 High and Low tones (500ms On/500ms Off) 111 Sweep (500ms On/500ms Off)			0 Off 1 On

Byte 22							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
User Preference Select Color Mode		Sync Mode		Function Mode			
00 Off 01 User Preference Select 1 10 User Preference Select 2 11 User Preference Select 3		Sync Start	Sync Trigger	0000 Use Index 810 0001 Stack Mode 0010 Level Mode 0100 Slice Mode 1000 ... 1111 Error			

Byte 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Level Bit mode			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 7bit mode 001 8bit mode 010 10bit mode 011 12bit mode 100 14bit mode 101 16bit mode				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

7.1.7 24 byte mode output process data – Slice mode

Byte 0							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 1 Speed		Slice 1 Pattern			Slice 1 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 1							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 2 Speed		Slice 2 Pattern			Slice 2 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 2							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 3 Speed		Slice 3 Pattern			Slice 3 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 3							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 4 Speed		Slice 4 Pattern			Slice 4 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 4							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 5 Speed		Slice 5 Pattern			Slice 5 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 5							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 6 Speed		Slice 6 Pattern			Slice 6 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 6							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 7 Speed		Slice 7 Pattern			Slice 7 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 7							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 8 Speed		Slice 8 Pattern			Slice 8 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 8							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 9 Speed		Slice 9 Pattern			Slice 9 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 9							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 10 Speed		Slice 10 Pattern			Slice 10 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 10							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 11 Speed		Slice 11 Pattern			Slice 11 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 11							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 12 Speed		Slice 12 Pattern			Slice 12 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 12							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 13 Speed		Slice 13 Pattern			Slice 13 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 13							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 14 Speed		Slice 14 Pattern			Slice 14 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 14							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 15 Speed		Slice 15 Pattern			Slice 15 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 15							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 16 Speed		Slice 16 Pattern			Slice 16 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 16							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 17 Speed		Slice 17 Pattern			Slice 17 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 17							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 18 Speed		Slice 18 Pattern			Slice 18 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 18							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 19 Speed		Slice 19 Pattern			Slice 19 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 19							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 20 Speed		Slice 20 Pattern			Slice 20 Color		
00 Off or use Index 2025 01 Low 10 Middle 11 Fast		000 Off or use Index 2024 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

Byte 20							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved							

Byte 21							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Buzzer Loudness				Buzzer Type			Buzzer
0000 Use Index 2001 (Default 100 %) 0001 10 % 0010 20 % 0011 30 % 0100 40 % 0101 50 % 0111 60 % 1000 70 % 1001 80 % 1010 90 % 1100 100 %				000 Use Index 2030 (Default Continuous) 001 Intermittent 010 High and Low tones 011 Sweep 100 Continuous (500ms On/500ms Off) 101 Intermittent (500ms On/500ms Off) 110 High and Low tones (500ms On/500ms Off) 111 Sweep (500ms On/500ms Off)			00 Off 01 On

Byte 22							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
User Preference Select Color Mode		Sync Mode		Function Mode			
00 Off 01 User Preference Select 1 10 User Preference Select 2 11 User Preference Select 3		Sync Start	Sync Trigger	0000 Use Index 810 0001 Stack Mode 0010 Level Mode 0100 Slice Mode 1000 ... 1111 Error			

Byte 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved				Eco Mode	Color Dom.	Autoscale	Top/Down
				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

7.2 IO-Link parameters and events

7.2.1 IO-Link-specific parameters (Direct Parameter Page)

Index Hex (dec)	Description	Length	Access	Default value
0x7 (7)	Vendor ID	2 byte	RO	0x012F (303)
0x8 (8)				
0x9 (9)	Device ID	3 byte	RO	0x100003 (10485790x100004 (1048580)
0x0A (10)				
0x0B (11)				

7.2.2 IO-Link-specific identification parameters (ISDU)

Index Hex (dec)	Description	Data Type	Length	Access	Default value
0x10 (16)	Vendor Name	String	19 byte	RO	Murrelektronik GmbH
0x11 (17)	Vendor Text	String	22 byte	RO	www.murrelektronik.com
0x12 (18)	Product Name	String	see table "0x12 (18) ... 0x14 (20) Device Variants"		
0x13 (19)	Product ID	String			
0x14 (20)	Product Text	String			
0x15 (21)	Serial Number	String	16 byte	RO	Unique vendor-specific notation for the serial number of the device
0x16 (22)	Hardware Revision	String	5 byte	RO	Unique vendor-specific notation for the hardware revision of the device
0x17 (23)	Software Revision	String	5 byte	RO	Unique vendor-specific notation for the firmware revision of the device
0x18 (24)	Application-Specific Tag	String	32 byte	R/W	***
0x19 (25)	Function Tag	String	32 byte	R/W	***
0x1A (26)	Location Tag	String	32 byte	R/W	***
0x24 (36)	Device status	UInt	8 bit	RO	0 = Device is OK 1 = Maintenance required 2 = Out of specification 3 = Functional check 4 = Failure
0x25 (37)	Detailed Device Status	Array	2 of 3 bytes	RO	0x00, 0x00, 0x00
0x28 (40)	Process Data Input	PD length	max.	RO	
	Device ID 0x100003		2 byte		2
	Device ID 0x100004				2
0x29 (41)	Process Data Output	PD length	max.	RO	
	Device ID 0x100003		24 byte		8
	Device ID 0x100004				24

0x12 (18) ... 0x14 (20)
Device Variants

Index Hex (dec)	Description	Data Type	Length	Access	Default value
0x12 (18)	Product Name	String	31 byte	RO	Modlight60 Pro-RGB M12-4U-IOL
0x13 (19)	Product ID	String	18 byte	RO	4000-76060-0000001
0x14 (20)	Product Text	String	64 byte	RO	Modlight60 Pro-RGB multifunction signal column

Index Hex (dec)	Description	Data Type	Length	Access	Default value
0x12 (18)	Product Name	String	33 byte	RO	Modlight60 Pro-RGB M12-4U-B-IOL
0x13 (19)	Product ID	String	18 byte	RO	4000-76060-0000002
0x14 (20)	Product Text	String	64 byte	RO	Modlight60 Pro-RGB multifunction signal column with buzzer module

The device outputs a parameter error in case one of these values is incorrectly configured (for more information, see chap. 8.9 "Troubleshooting").

7.2.3 Murrelektronik product-specific parameters (ISDU)

Index Hex (dec)	Subindex Hex (dec)	Description	Data Type	Length	Access	Default value	Value
0x032A (810)		Operating Mode	UInt	8 bit	R/W	0x01 Level Mode	0x01 Level Mode 0x04 Stack Mode 0x0A Slice Mode Other Values Error (Inactive)
0x07D0 (2000)		LED Intensity	UInt	8 bit	R/W	0x64 (100)	0 ... 0x064 (0 ... 100 %)
0x07D1 (2001)		Buzzer Sound Level	UInt	8 bit	R/W	0x64 (100)	0 ... 0x064 (0 ... 100 %)
0x07DF (2015)		Stack LED Pattern	RecordT	5 byte	R/W		0x00 (0) Continuous 0x01 (1) Blinking 0x02 (2) Flashing 0x03 (3) Gradation blinking
	0x01 (1)	Stack 1	UInt	1 byte	R/W	0x00 (0)	
	0x02 (2)	Stack 2	UInt	1 byte	R/W	0x00 (0)	
	0x03 (3)	Stack 3	UInt	1 byte	R/W	0x00 (0)	
	0x04 (4)	Stack 4	UInt	1 byte	R/W	0x00 (0)	
	0x05 (5)	Stack 5	UInt	1 byte	R/W	0x00 (0)	
0x07E0 (2016)		Stack LED Speed	RecordT	5 byte	R/W		0x00 (0) Slow 0x01 (1) Middle 0x02 (2) Fast
	0x01 (1)	Stack 1	UInt	1 byte	R/W	0x00 (0)	
	0x02 (2)	Stack 2	UInt	1 byte	R/W	0x00 (0)	
	0x03 (3)	Stack 3	UInt	1 byte	R/W	0x00 (0)	
	0x04 (4)	Stack 4	UInt	1 byte	R/W	0x00 (0)	
	0x05 (5)	Stack 5	UInt	1 byte	R/W	0x00 (0)	

Index Hex (dec)	Subindex Hex (dec)	Description	Data Type	Length	Access	Default value	Value
0x07E1 (2017)		Customized Color	RecordT	2 byte	R/W		0x00 (0) off 0x01 (1) red 0x02 (2) orange red 0x03 (3) orange 0x04 (4) gold 0x05 (5) amber 0x06 (6) yellow 0x07(7) lemon 0x08 (8) lime 0x09 (9) green 0x0A (10) spring green 0x0B (11) cyan 0x0C (12) deep sky blue 0x0D (13) blue 0x0E (14) medium blue 0x0F (15) dark blue 0x10 (16) purple 0x11 (17) dark violet 0x12 (18) magenta 0x13 (19) reddish purple 0x14 (20) purplish red 0x15 (21) white
	0x01 (1)	Customized Color 1	UInt	1 byte	R/W	0x10 (16)	
	0x02 (2)	Customized Color 2	UInt	1 byte	R/W	0x0B (11)	
0x07E3 (2019)		Size of Stacks	RecordT	5 byte	R/W		0 ... 20 (Summary must be 20)
	0x01 (1)	Size of Stack 1	UInt	1 byte	R/W	0x04 (4)	
	0x02 (2)	Size of Stack 2	UInt	1 byte	R/W	0x04 (4)	
	0x03 (3)	Size of Stack 3	UInt	1 byte	R/W	0x04 (4)	
	0x04 (4)	Size of Stack 4	UInt	1 byte	R/W	0x04 (4)	
	0x05 (5)	Size of Stack 5	UInt	1 byte	R/W	0x04 (4)	
0x07E4 (2020)		Blank between Stacks	BooleanT	1 bit	R/W	0x00 (0)	0x00 no 0x01 yes

Index Hex (dec)	Subindex Hex (dec)	Description	Data Type	Length	Access	Default value	Value
0x07E6 (2022)		Level Meter Thresholds	RecordT	20 byte	R/W		
	0x01 (1)	Threshold Slice 1	UInt	1 byte	R/W	0x01 (1)	0 ... 0x064 (0 ... 100)
	0x02 (2)	Threshold Slice 2	UInt	1 byte	R/W	0x06 (6)	
	0x03 (3)	Threshold Slice 3	UInt	1 byte	R/W	0x0B (11)	
	0x04 (4)	Threshold Slice 4	UInt	1 byte	R/W	0x10 (16)	
	0x05 (5)	Threshold Slice 5	UInt	1 byte	R/W	0x15 (21)	
	0x06 (6)	Threshold Slice 6	UInt	1 byte	R/W	0x1A (26)	
	0x07 (7)	Threshold Slice 7	UInt	1 byte	R/W	0x1F (31)	
	0x08 (8)	Threshold Slice 8	UInt	1 byte	R/W	0x24 (36)	
	0x09 (9)	Threshold Slice 9	UInt	1 byte	R/W	0x29 (41)	
	0x0A (10)	Threshold Slice 10	UInt	1 byte	R/W	0x2E (46)	
	0x0B (11)	Threshold Slice 11	UInt	1 byte	R/W	0x33 (51)	
	0x0C (12)	Threshold Slice 12	UInt	1 byte	R/W	0x38 (56)	
	0x0D (13)	Threshold Slice 13	UInt	1 byte	R/W	0x3D (61)	
	0x0E (14)	Threshold Slice 14	UInt	1 byte	R/W	0x42 (66)	
	0x0F (15)	Threshold Slice 15	UInt	1 byte	R/W	0x47 (71)	
	0x10 (16)	Threshold Slice 16	UInt	1 byte	R/W	0x4C (76)	
	0x11 (17)	Threshold Slice 17	UInt	1 byte	R/W	0x51 (81)	
	0x12 (18)	Threshold Slice 18	UInt	1 byte	R/W	0x56 (86)	
	0x13 (19)	Threshold Slice 19	UInt	1 byte	R/W	0x5B (91)	
	0x14 (20)	Threshold Slice 20	UInt	1 byte	R/W	0x60 (96)	
0x07E7 (2023)		Level and Slice Mode LED Color	RecordT	20 byte	R/W		0x00 (0) Off
	0x01 (1)	Slice 1 LED Color	UInt	1 byte	R/W	0x0D (13)	0x01 (1) red
	0x02 (2)	Slice 2 LED Color	UInt	1 byte	R/W	0x0D (13)	0x02 (2) orange red
	0x03 (3)	Slice 3 LED Color	UInt	1 byte	R/W	0x0D (13)	0x03 (3) orange
	0x04 (4)	Slice 4 LED Color	UInt	1 byte	R/W	0x0D (13)	0x04 (4) gold
	0x05 (5)	Slice 5 LED Color	UInt	1 byte	R/W	0x0D (13)	0x05 (5) amber
	0x06 (6)	Slice 6 LED Color	UInt	1 byte	R/W	0x0D (13)	0x06 (6) yellow
	0x07 (7)	Slice 7 LED Color	UInt	1 byte	R/W	0x0D (13)	0x07(7) lemon
	0x08 (8)	Slice 8 LED Color	UInt	1 byte	R/W	0x0D (13)	0x08 (8) lime
	0x09 (9)	Slice 9 LED Color	UInt	1 byte	R/W	0x0D (13)	0x09 (9) green
	0x0A (10)	Slice 10 LED Color	UInt	1 byte	R/W	0x0D (13)	0x0A (10) spring green
	0x0B (11)	Slice 11 LED Color	UInt	1 byte	R/W	0x0D (13)	0x0B (11) cyan
	0x0C (12)	Slice 12 LED Color	UInt	1 byte	R/W	0x0D (13)	0x0C (12) deep sky blue
	0x0D (13)	Slice 13 LED Color	UInt	1 byte	R/W	0x0D (13)	0x0D (13) blue
	0x0E (14)	Slice 14 LED Color	UInt	1 byte	R/W	0x0D (13)	0x0E (14) medium blue
	0x0F (15)	Slice 15 LED Color	UInt	1 byte	R/W	0x0D (13)	0x0F (15) dark blue
	0x10 (16)	Slice 16 LED Color	UInt	1 byte	R/W	0x0D (13)	0x10 (16) purple
	0x11 (17)	Slice 17 LED Color	UInt	1 byte	R/W	0x0D (13)	0x11 (17) dark violet
	0x12 (18)	Slice 18 LED Color	UInt	1 byte	R/W	0x0D (13)	0x12 (18) magenta
	0x13 (19)	Slice 19 LED Color	UInt	1 byte	R/W	0x0D (13)	0x13 (19) reddish purple
	0x14 (20)	Slice 20 LED Color	UInt	1 byte	R/W	0x0D (13)	0x14 (20) purplish red
							0x15 (21) white

Index Hex (dec)	Subindex Hex (dec)	Description	Data Type	Length	Access	Default value	Value
0x07E8 (2024)		Level and Slice Mode LED Pattern	RecordT	20 byte	R/W		
	0x01 (1)	Slice 1 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x02 (2)	Slice 2 LED Pattern	UInt	1 byte	R/W	0x00 (0)	0x00 (0) Continuous
	0x03 (3)	Slice 3 LED Pattern	UInt	1 byte	R/W	0x00 (0)	0x01 (1) Blinking
	0x04 (4)	Slice 4 LED Pattern	UInt	1 byte	R/W	0x00 (0)	0x02 (2) Flashing
	0x05 (5)	Slice 5 LED Pattern	UInt	1 byte	R/W	0x00 (0)	0x03 (3) Gradation blinking
	0x06 (6)	Slice 6 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x07 (7)	Slice 7 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x08 (8)	Slice 8 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x09 (9)	Slice 9 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x0A (10)	Slice 10 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x0B (11)	Slice 11 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x0C (12)	Slice 12 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x0D (13)	Slice 13 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x0E (14)	Slice 14 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x0F (15)	Slice 15 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x10 (16)	Slice 16 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x11 (17)	Slice 17 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x12 (18)	Slice 18 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x13 (19)	Slice 19 LED Pattern	UInt	1 byte	R/W	0x00 (0)	
	0x14 (20)	Slice 20 LED Pattern	UInt	1 byte	R/W	0x00 (0)	

Index Hex (dec)	Subindex Hex (dec)	Description	Data Type	Length	Access	Default value	Value
0x07E9 (2025)	0x07E9 (2025)	Level and Slice Mode LED Pattern speed	RecordT	20 byte	R/W		
0x01 (1)	0x01 (1)	Slice 1 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	0x00 (0) Slow 0x01 (1) Middle 0x02 (2) Fast
0x02 (2)	0x02 (2)	Slice 2 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x03 (3)	0x03 (3)	Slice 3 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x04 (4)	0x04 (4)	Slice 4 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x05 (5)	0x05 (5)	Slice 5 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x06 (6)	0x06 (6)	Slice 6 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x07 (7)	0x07 (7)	Slice 7 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x08 (8)	0x08 (8)	Slice 8 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x09 (9)	0x09 (9)	Slice 9 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x0A (10)	0x0A (10)	Slice 10 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x0B (11)	0x0B (11)	Slice 11 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x0C (12)	0x0C (12)	Slice 12 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x0D (13)	0x0D (13)	Slice 13 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x0E (14)	0x0E (14)	Slice 14 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x0F (15)	0x0F (15)	Slice 15 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x10 (16)	0x10 (16)	Slice 16 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x11 (17)	0x11 (17)	Slice 17 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x12 (18)	0x12 (18)	Slice 18 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x13 (19)	0x13 (19)	Slice 19 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	
0x14 (20)	0x14 (20)	Slice 20 LED Pattern speed	UInt	1 byte	R/W	0x00 (0)	

Index Hex (dec)	Subindex Hex (dec)	Description	Data Type	Length	Access	Default value	Value
0x07EB (2027)		User Preference Color Bank 1	RecordT	20 byte	R/W		0x00 (0) Off 0x01 (1) red 0x02 (2) orange red 0x03 (3) orange 0x04 (4) gold 0x05 (5) amber 0x06 (6) yellow 0x07(7) lemon 0x08 (8) lime 0x09 (9) green 0x0A (10) spring green 0x0B (11) cyan 0x0C (12) deep sky blue 0x0D (13) blue 0x0E (14) medium blue 0x0F (15) dark blue 0x10 (16) purple 0x11 (17) dark violet 0x12 (18) magenta 0x13 (19) reddish purple 0x14 (20) purplish red 0x15 (21) white
	0x01 (1)	Slice 1 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x02 (2)	Slice 2 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x03 (3)	Slice 3 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x04 (4)	Slice 4 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x05 (5)	Slice 5 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x06 (6)	Slice 6 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x07 (7)	Slice 7 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x08 (8)	Slice 8 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x09 (9)	Slice 9 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0A (10)	Slice 10 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0B (11)	Slice 11 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0C (12)	Slice 12 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0D (13)	Slice 13 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0E (14)	Slice 14 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0F (15)	Slice 15 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x10 (16)	Slice 16 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x11 (17)	Slice 17 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x12 (18)	Slice 18 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x13 (19)	Slice 19 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x14 (20)	Slice 20 LED Color	UInt	1 byte	R/W	0x00 (0)	
0x07EC (2028)		User Preference Color Bank 2	RecordT	20 byte	R/W		0x00 (0) Off 0x01 (1) red 0x02 (2) orange red 0x03 (3) orange 0x04 (4) gold 0x05 (5) amber 0x06 (6) yellow 0x07(7) lemon 0x08 (8) lime 0x09 (9) green 0x0A (10) spring green 0x0B (11) cyan 0x0C (12) deep sky blue 0x0D (13) blue 0x0E (14) medium blue 0x0F (15) dark blue 0x10 (16) purple 0x11 (17) dark violet 0x12 (18) magenta 0x13 (19) reddish purple 0x14 (20) purplish red 0x15 (21) white
	0x01 (1)	Slice 1 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x02 (2)	Slice 2 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x03 (3)	Slice 3 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x04 (4)	Slice 4 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x05 (5)	Slice 5 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x06 (6)	Slice 6 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x07 (7)	Slice 7 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x08 (8)	Slice 8 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x09 (9)	Slice 9 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0A (10)	Slice 10 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0B (11)	Slice 11 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0C (12)	Slice 12 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0D (13)	Slice 13 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0E (14)	Slice 14 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0F (15)	Slice 15 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x10 (16)	Slice 16 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x11 (17)	Slice 17 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x12 (18)	Slice 18 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x13 (19)	Slice 19 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x14 (20)	Slice 20 LED Color	UInt	1 byte	R/W	0x00 (0)	

Index Hex (dec)	Subindex Hex (dec)	Description	Data Type	Length	Access	Default value	Value
0x07ED (2029)		User Preference Color Bank 3	RecordT	20 byte	R/W		0x00 (0) Off 0x01 (1) red 0x02 (2) orange red 0x03 (3) orange 0x04 (4) gold 0x05 (5) amber 0x06 (6) yellow 0x07(7) lemon 0x08 (8) lime 0x09 (9) green 0x0A (10) spring green 0x0B (11) cyan 0x0C (12) deep sky blue 0x0D (13) blue 0x0E (14) medium blue 0x0F (15) dark blue 0x10 (16) purple 0x11 (17) dark violet 0x12 (18) magenta 0x13 (19) reddish purple 0x14 (20) purplish red 0x15 (21) white
	0x01 (1)	Slice 1 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x02 (2)	Slice 2 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x03 (3)	Slice 3 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x04 (4)	Slice 4 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x05 (5)	Slice 5 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x06 (6)	Slice 6 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x07 (7)	Slice 7 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x08 (8)	Slice 8 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x09 (9)	Slice 9 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0A (10)	Slice 10 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0B (11)	Slice 11 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0C (12)	Slice 12 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0D (13)	Slice 13 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0E (14)	Slice 14 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x0F (15)	Slice 15 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x10 (16)	Slice 16 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x11 (17)	Slice 17 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x12 (18)	Slice 18 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x13 (19)	Slice 19 LED Color	UInt	1 byte	R/W	0x00 (0)	
	0x14 (20)	Slice 20 LED Color	UInt	1 byte	R/W	0x00 (0)	
0x07EE (2030)	0x07EE (2030)	Buzzer Pattern	UInt	8 bit	R/W	0x00 (0)	0x00 (0) Continuous (default) 0x01 (1) Intermittent 0x02 (2) High and Low tones 0x03 (3) Sweep 0x04 (4) Continuous (500ms On/500ms Off) 0x05 (5) Intermittent (500ms On/500ms Off) 0x06 (6) High and Low tones (500ms On/500ms Off) 0x07(7) Sweep (500ms On/500ms Off) 0x08 ... 0xFF (08 ... 255) Error
0x07F8 (2040)		IO-Link Status LED	UInt	8 bit	R/W	0x00	0x00 enabled 0x01 disabled

Explanation of parameters

0x032A (810)
Operating Mode

This parameter is referenced in case all process data bits for “Operating Mode” are 0.

Select an “Operating Mode”. This ISDU has the following values:
If a wrong value is set, an error is output and both the LED and the buzzer switch off. The device starts to operate in this “Operating Mode” when the correct value is set.

Value	Description
1	Level Mode
4	Stack Mode
10	Slice Mode
Other	Error (Inactive)

0x07D0 (2000)
LED Intensity

Sets the LED brightness. Can be set between 0 and 100 in increments of 1. The LED is switched off if the value is 0.
If [Eco Mode] is set to “1” in the process data, the value of this element is divided by 2 and rounded up to the next 10.

0x07D1 (2001)
Buzzer Sound Level

This parameter is referenced in case all process data bits for “Buzzer Loudness” are 0.

Sets the buzzer loudness. Can be set between 0 and 100 in increments of 1. The buzzer is switched off if the value is 0.

0x07DF (2015)
Stack LED Pattern

This parameter is referenced in case all process data bits for “Stack Animation Pattern” of the corresponding stack are 0.

Selects an animation pattern for each stack in Stack mode. 0 (continuous) is the default value for all.

Value	Description
0	Continuous
1	Blinking
2	Flashing
3	Gradation blinking

0x07E0 (2016)
Stack LED Speed

This parameter is referenced in case all process data bits for “Stack Animation Speed” of the corresponding stack are 0.

Selects an animation speed for each stack in Stack mode. 0 (slow) is the default value for all.

Value	Description
0	Slow
1	Middle
2	Fast

0x07E1 (2017)
Customized Color

Selects the stack color set to “Customized Color” in Stack mode. Select from a total of 22 preset colors; including Light OFF and 21 colors.

Subidx	Name	Type	Range	Standard	
1	Color 1	UInt	0 ... 21	16	Violet
2	Color 2	UInt	0 ... 21	11	Cyan

0x07E3 (2019)
Size of Stacks
(total 20 in decimal)

This parameter is referenced in case all process data bits for “Stack 1 to 5” are 0.

Defines the size of the individual stacks in Stack mode. The default value is 4 for all. The sum of these values is 20.

0x07E4 (2020)
Blank between Stacks

Defines whether a blank space should separate the stacks.

All LEDs light up if “0” is set. A blank space (1 slice with light switched off) is inserted between stacks if “1” is set.

0x07E6 (2022)
Level Meter Thresholds

Refers to the threshold value of each slice in Level mode.

0x07E7 (2023)
Level and Slice Mode LED Color

Selects the color for each slice.

0x07E8 (2024)
Level and Slice Mode LED Pattern

Selects the blinking pattern of each LED in Level mode and Slice mode. The process data setting has priority in slice mode.

This parameter can be accessed via the subindex or the complete index in the IODD.

Value	Description
0	Continuous
1	Blinking
2	Flashing
3	Gradation blinking

0x07E9 (2025)
Level and Slice Mode LED Pattern speed

Selects the speed of the individual LEDs in Level mode and Slice mode. The process data setting has priority in slice mode.

This parameter can be accessed via the subindex or the complete index in the IODD.

If the LED speed is specified for each slice and the LED pattern for this slice is “Continuous”, the value of this element is not considered.

Value	Description
0	Slow
1	Middle
2	Fast

0x07EB (2027) ...
0x07ED (2029)
User Preference Color

Color selection for slices in the user preset.

0x07EE (2030)
Buzzer Pattern

This parameter is referenced when the bits representing the “Buzzer On/Off” process data bit are “1” and the “Buzzer Type” bits are all “0”.

Select a buzzer pattern, see Fig. 8-2: , if the buzzer is activated in the process data. 0 (continuous) is the default value.

0x07F8 (2040)
IOL Status LED

Defines whether the LED lights up in IO-Link mode or not.

If “0” is set, the LED lights up in line with the specifications in chap. 8.8 "IO-Link status LED" . If “1” is set, the LED does not light up.

Level Mode Default Values

These are IO-Link parameter default values for Level mode and Slice mode with 8 bytes.

Position	Threshold	Color	Color designation	Blinking pattern	Speed
20th Slice	96	13	Blue	Continuous	-
19th Slice	91	13	Blue	Continuous	-
18th Slice	86	13	Blue	Continuous	-
17th Slice	81	13	Blue	Continuous	-
16th Slice	76	13	Blue	Continuous	-
15th Slice	71	13	Blue	Continuous	-
14th Slice	66	13	Blue	Continuous	-
13th Slice	61	13	Blue	Continuous	-
12th Slice	56	13	Blue	Continuous	-
11th Slice	51	13	Blue	Continuous	-
10th Slice	46	13	Blue	Continuous	-
9th Slice	41	13	Blue	Continuous	-
8th Slice	36	13	Blue	Continuous	-
7th Slice	31	13	Blue	Continuous	-
6th Slice	26	13	Blue	Continuous	-
5th Slice	21	13	Blue	Continuous	-
4th Slice	16	13	Blue	Continuous	-
3rd Slice	11	13	Blue	Continuous	-
2nd Slice	6	13	Blue	Continuous	-
1st Slice	1	13	Blue	Continuous	-

7.2.4 IO-Link-specific event codes

Event Code ID	Description	Event Type	Device status value	Recommended maintenance action
0x5000	Device hardware fault	Error	4	Device exchange
0x6320	Parameter error	Error	4	Check data sheet and values

7.2.5 IO-Link-specific error types

Code	Name	Discription
0x8000	Device application error – no	There is no detailed information available.
0x8011	Index not available	Access to a non-existent index.
0x8012	Subindex not available	Access to a non-existent subindex.
0x8020	Service temporarily not available	On the parameters just cannot be accessed. The device does not allow this in the current state.
0x8023	Access denied	Write access to a read-only parameter.
0x8030	Parameter value out of range	Written parameter value is out of range.
0x8033	Parameter length overrun	Written parameter length is greater than allowed.
0x8034	Parameter length underrun	Written parameter length is smaller than allowed.
0x8035	Function not available	Written command is not supported by the device.
0x8036	Function temporarily unavailable	Written command is not supported by the device in its current state.

Code	Name	Discription
0x8040	Invalid parameter set	Typed single parameter value collides with the other parameter settings.
0x8041	Inconsistent parameter set	At the end of the block parameter transfer inconsistencies were detected. The devices plausibility check failed.
0x8082	Application not ready	Access is denied, because the device is currently not available.

7.2.6 Loading the IODD files

You can download the IODDs for the parameter list from the online shop (shop.murrelektronik.de) or in the IODDfinder (ioddfinder.io-link.com) by specifying the art. no. of the product to use these IODDs in a configuration tool.

7.3 Reset

Users have three options to put a Modlight60 Pro into a specific defined state according to IO-Link Spec. 1.1.3:

a | Power supply Off/On (PowerCycle)

b | SystemCommand “Application reset” (129)

c | SystemCommand “Back to box” (131)

Impacted item	Power Cycle	Application Reset	Back-to-box
Diagnosis and status	“0”	No	“0”
History recorder	No	No	No
Techology specific	No	Default	Default
Identifications/tag	No	No	Default
Data Storage behavior	No	Upload requiredDS Event	Delete upload request
Revision ID	Default	Default	Default
Device ID	No	Default	Default
Com behavior	Restart via Master	Restart triggered by Device if active COM parameter differ from default	Device stops and disables communication until next Power Cycle
Access locks	No	Default	Default
Block Parameter transfer	-	Discard	Discard

8 Operation

The Modlight60 Pro controls the LED slices and the buzzer sound as per the IO-Link process data.

Control via 8 or 24 bytes is possible depending on the device ID usage. The function can be used with any master in line with IO-Link Spec. 1.1.

Available device IDs

The process data length is defined via the device ID:

- Device ID 0x100003
  - 2 bytes of input data
  - 8 bytes output data (supplied state)
- Device ID 0x100004
  - 2 bytes of input data
  - 24 bytes of output data (each slice can be controlled individually)

LED control function

This function controls the LED slices as soon as it receives signals from the IO-Link communication function.

The function has two different control methods:

- Control via IO-Link process data in three modes
  - Stack Mode
  - Slice Mode
  - Level Mode
- Control in Demo mode

Modes

The device can be operated in these three modes by changing the [0x032A (810) Operating Mode] setting.

The LEDs of each segment are controlled individually in Slice mode, Level mode, and in the user settings.

Multiple slices are controlled as a single stack in Stack mode. The number of slices per stack can be set.

Set mode via process data

The mode of the Modlight60 Pro is set in byte 6 or byte 22:

- Value 0x01 Stack Mode
  - Bytes 0 to 4 are used.
- Value 0x02 Level Mode
  - Bytes 0 and 1 are used, depending on Level Mode, for 7 bit (0 to 100), 8 bit (0 to 255), or 16 bit (65565).
- Value 0x04 Slice Mode (8 byte)
  - Only on/off with predefined colors, animations, and speeds is available for each slice.
- Value 0x04 Slice Mode (24 byte)
  - The colors, animations, and speeds can be defined for each slice using the process data.

8.1 Structure

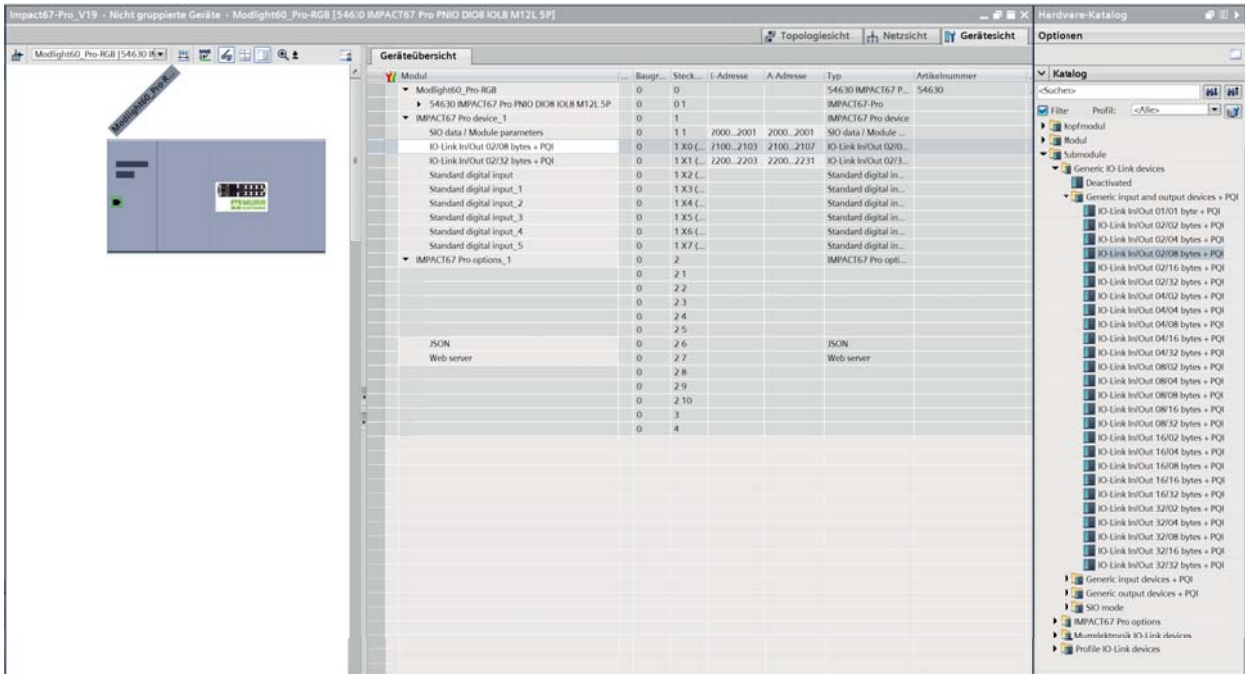
Fig. 8-1: Structure Modlight60 Pro

8.2 Configuring the Device ID

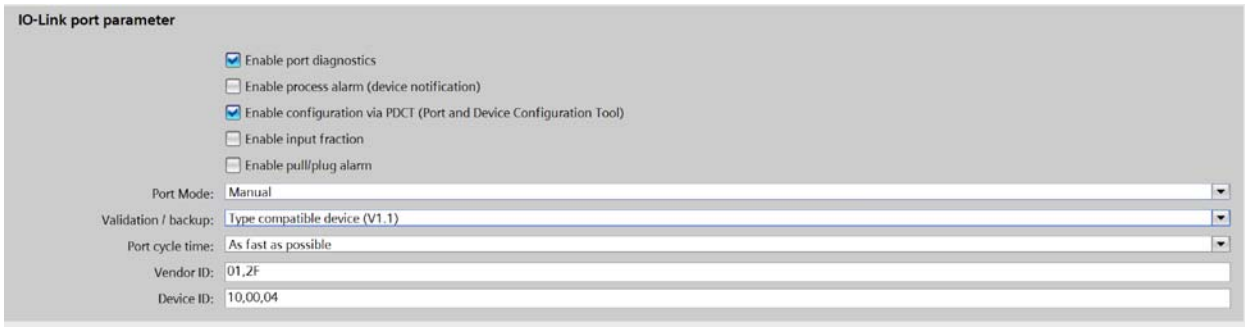
NOTE
The configured input and output data length of the used master port must always be equal to or greater than in the Modlight60 Pro.

Example with a Murrelektronik MVK/Impact67 Pro:

- A corresponding 02/08 byte submodule is available for the 8 byte mode, and a 02/32 byte submodule is available for the 24 byte mode.



- The master port needs to be set as follows:
  - IO-Link manual
  - 1.1 compatible device
  - Vendor ID and device ID



8.3 Operation via parameter

The Modlight60 Pro allows users to choose between 3 operating modes:

- Stack Mode
- Level Mode
- Slice Mode

The operating mode is specified via index 810. The mode specified via index 810 remains active as long as the process data in byte 6 and byte 22 (mode) are inactive.

8.3.1 Stack Mode via parameter

The relevant parameters in Stack mode are as follows, see Chap. Murrelektronik product-specific parameters (ISDU):

- Index 2000: LED Intensity
- Index 2015: Stack LED Pattern
- Index 2016: Stack LED Speed
- Index 2017: Customized Color 1 and 2
- Index 2019: Size of Stacks
- Index 2020: Blank between Stacks

Once the stack mode has been selected via 810, it is sufficient to select the stack color in the process data.

The process data overview, see chap. 7.1 "Process data", shows which parameter is associated with a process data value of “0” (off or use index xxxx).

Byte x							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack x Speed		Stack x Pattern			Stack x Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

See chap. 8.5 "Independent function mode":

- Top/Down
- Eco Mode
- Autoscale

Byte 7 or 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 1 ... 5			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 Off or use Index 2019 001 ... 101 20 Slices / x of Stacks)				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

8.3.2 Level Mode via parameter

The relevant parameters in Level mode are as follows, see Chap. Murrelektronik product-specific parameters (ISDU):

- Index 2000: LED Intensity
- Index 2022: Level Meter Thresholds
- Index 2023: Slice Colors
- Index 2024: Slice LED Pattern
- Index 2025: Slice LED Speed

Once the Level mode has been selected via 810, the desired range of values must be selected via the process data:

- 7 bit to 16 bit Level mode
- Level Value

Byte 1								**Byte 0**							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved								7-bit mode 0 ... 100							
Reserved								8-bit mode 0 to 255							
Reserved								10-bit mode 0 to 1023							
Reserved								12-bit mode 0 to 4095							
Reserved								14-bit mode 0 to 16383							
16-bit mode 0 to 65535															

See chap. 8.5 "Independent function mode":

- Top/Down
- Eco Mode
- Color Domination

Byte 7 or 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Level Bit mode			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 7bit mode 001 8bit mode 010 10bit mode 011 12bit mode 100 14bit mode 101 16bit mode				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

8.3.3 Slice Mode via parameter

The relevant parameters in Slice mode are as follows, see Chap. Murrelektronik product-specific parameters (ISDU):

- Index 2000: LED Intensity
- Index 2023: Slice Colors
- Index 2024: Slice LED Pattern
- Index 2025: Slice LED Speed

Once the Slice mode has been selected via 810, the individual signal slices can be switched on or off via the process data.

Byte 1								**Byte 0**							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 16	Slice 15	Slice 14	Slice 13	Slice 12	Slice 11	Slice 10	Slice 9	Slice 8	Slice 7	Slice 6	Slice 5	Slice 4	Slice 3	Slice 2	Slice 1
0 Off 1 On															

Byte 4 / Byte 3								**Byte 2**							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved												Slice 20	Slice 19	Slice 18	Slice 17
												0 Off 1 On			

The slice color and animation is adopted from index 2023, 2024, and 2025 just like in Level mode.

See chap. 8.5 "Independent function mode":

- Top/Down
- Eco Mode

Byte 7 or 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved				Eco Mode	Color Dom.	Autoscale	Top/Down
				0 Off 1 On (50% of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

NOTE
We recommend operation with 24 byte process data for maximum flexibility.

8.4 Operation via process data

Operation via process data enables switching between Stack mode, Level mode, and Slice mode during operation, thus integrating status indications and process indications.

8.4.1 Selecting the operation mode used

Byte 6 or 22, whichever is applicable, enables the activation of the desired functional mode and switching between different modes.

Byte 6 or 22							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
User Preference Select Color Mode		Sync Mode		Function Mode			
00 Off 01 User Preference Select 1 10 User Preference Select 2 11 User Preference Select 3		Sync Start	Sync Trigger	0000 Use Index 810 0001 Stack Mode 0010 Level Mode 0100 Slice Mode 1000 ... 1111 Error			

8.4.2 Stack mode via process data

Up to 5 stacks can be controlled in Stack mode.

The relevant parameters in Stack mode are as follows:

- Index 2000: LED Intensity
- Index 2017: Customized Color 1 und 2
- Index 2020: Blank between Stacks

Each individual stack can be controlled via process data in terms of color and animation.

Byte x							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack x Speed		Stack x Pattern			Stack x Color		
00 Off or use Index 2016 01 Low 10 Middle 11 Fast		000 Off or use Index 2015 001 Continuous 010 Blinking 011 Flashing 100 Gradations blinking 101 ... 111 Error			000 Off 001 Red 010 Green 011 Yellow 100 Blue 101 Customized Color 1 110 Customized Color 2 111 White		

See chap. 8.5 "Independent function mode" and chap. 8.6 "Dependent function mode":

- Top/Down
- Eco Mode
- Autoscale
- Number of stacks

Byte 7 or 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 1 ... 5			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 Off or use Index 2019 001 ... 101 20 Slices / x of Stacks)				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack Mode)	0 Off 1 On

8.4.3 Level mode via process data

A process sequence/fill level etc. can be indicated in Level mode.

The relevant parameters in Level mode are as follows:

- Index 2000: LED Intensity
- Index 2022: Level Meter Thresholds
- Index 2023: Slice Colors
- Index 2024: Slice LED Pattern
- Index 2025: Slice LED Speed

Relevant process data:

- Level Value

Byte 1								**Byte 0**							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved								7-bit mode 0 ... 100							
Reserved								8-bit mode 0 to 255							
Reserved								10-bit mode 0 to 1023							
Reserved								12-bit mode 0 to 4095							
Reserved								14-bit mode 0 to 16383							
16-bit mode 0 to 65535															

See chap. 8.5 "Independent function mode" and chap. 8.6 "Dependent function mode":

- Top/Down
- Eco Mode
- Color Domination

Byte 7 or 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Level Bit mode			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 7bit mode 001 8bit mode 010 10bit mode 011 12bit mode 100 14bit mode 101 16bit mode				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

8.4.4 Slice mode via process data

The relevant parameters in Slice mode are as follows:

- Index 2000: LED Intensity
- Index 2023: Slice Colors
- Index 2024: Slice LED Pattern
- Index 2025: Slice LED Speed

The individual signal slices can be switched on or off via the process data.

Byte 1								Byte 0							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Slice 16	Slice 15	Slice 14	Slice 13	Slice 12	Slice 11	Slice 10	Slice 9	Slice 8	Slice 7	Slice 6	Slice 5	Slice 4	Slice 3	Slice 2	Slice 1
0 Off 1 On															

Byte 4 / Byte 3								Byte 2							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**	**Bit7**	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved												Slice 20	Slice 19	Slice 18	Slice 17
												0 Off 1 On			

The slice color and animation is adopted from index 2023, 2024, and 2025 just like in Level mode.

See chap. 8.5 "Independent function mode":

- Top/Down
- Eco Mode

Byte 7 or 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Reserved				Eco Mode	Color Dom.	Autoscale	Top/Down
				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack mode)	0 Off 1 On

8.5 Independent function mode

8.5.1 Device Synchronization mode

The Device Synchronization mode enables the synchronization of multiple Modlight60 Pro. The purpose of this is to prevent the LED controller from drifting off.

The activation of Sync Start with a high signal is a prerequisite for initiating the synchronization. The lights can be synchronized again using the “High Level” sync trigger after a period of 2 to 16 seconds.

Modlight60 Pro - 1	Modlight60 Pro - 2	Modlight60 Pro - 3	
			Start
			Drift
			Sync trigger
			No drift

8.5.2 User Preference Select Color Mode

User Preference Select Color Mode is an indication mode available in every IO-Link mode. This indication mode has the highest priority.

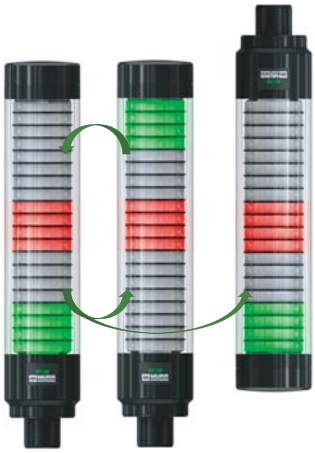
The User Preference Select Color Mode can be used for purposes such as the implementation of danger signals in case of emergencies in the system area.

The relevant parameters are as follows:

- Index 2000: LED Intensity
- Index 2027: User Preference Color Bank 1
- Index 2028: User Preference Color Bank 2
- Index 2029: User Preference Color Bank 3

Byte 6 or 22							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
User Preference Select Color Mode		Sync Mode		Function Mode			
00 Off 01 User Preference Select 1 10 User Preference Select 2 11 User Preference Select 3		Sync Start	Sync Trigger	0000 Use Index 810 0001 Stack Mode 0010 Level Mode 0100 Slice Mode 1000 ... 1111 Error			

8.5.3 Top/Down Mode



The Top/Down mode is used to adjust the counting direction. The same process data can be indicated in the same way for upright and suspended installation.

If Top/Down is activated via process data, the counting direction changes from “1st slice bottom” to “1st slice top”.

Therefore, the same indication can be achieved with suspended installation without adjusting the process data.

Top down example

Top/Down off:

- Stack 1 green and stack 3 red are active.

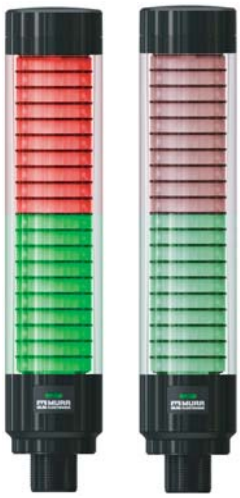
Top/Down on, upright installation:

- Stack 5 green and stack 3 red are active.

Top/Down on, suspended installation:

- Stack 5 green and stack 3 red are active.

8.5.4 LED intensity and Eco Mode



The 2000 LED Intensity used in each mode can be set between 0 and 100 % in increments of 10 % via process data, or in increments of 1 % via parameterization.

The LED brightness depends on the values for 2000 LED Intensity and Eco Mode.

The Eco mode can be used for purposes such as energy economy.

If the Eco mode is activated via process data, the light intensity set in Index 2000 is divided by two. Odd values are rounded up.

Eco Mode	0 = Off	1 = On
Index 2000 light intensity	100 %	50 %
	90 %	
	80 %	40 %
	70 %	
	60 %	30 %
	50 %	
	40 %	20 %
	30 %	
	20 %	10 %
	10 %	
	0	0

Eco mode example

Eco mode off, Autoscale on:

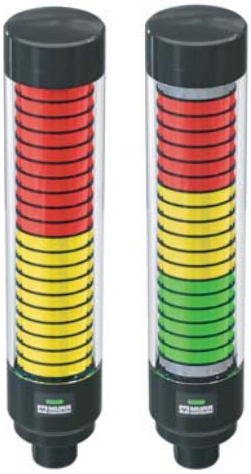
- Stack 1 green and stack 3 red are active, distributed across the Modlight60 Pro, and illuminated.

Eco mode on, Autoscale on:

- Stack 1 green and stack 3 red are active, distributed across the Modlight60 Pro, and illuminated at half intensity.

8.6 Dependent function mode

8.6.1 Autoscale



Autoscale is available in Stack mode only.

When Autoscale is activated, the stacks activated via process data are automatically distributed across the entire Modlight60 Pro.

Autoscale example

Autoscale off:

- Stack 1 green and stack 3 red are active.

Autoscale on:

- Stack 1 green and stack 3 red are active and distributed across the Modlight60 Pro.

8.6.2 Color Domination

The Color Domination On/Off process data are available in Level mode only.

In Color Domination mode, the Modlight60 Pro takes control of the color and animation of the uppermost active signal slices.

8.6.3 Number of stacks

The Stack 1 ... 5 process data are available in Stack mode only.

The number of stacks between 1 and 5 can be selected here via process data. The default value of 5 is provided by Index 2019.

Byte 7 or 23							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Stack 1 ... 5			Reserved	Eco Mode	Color Dom.	Autoscale	Top/Down
000 Off or use Index 2019 001 ... 101 20 Slices / x of Stacks)				0 Off 1 On (50 % of Index 2000)	0 Off 1 On (only in Level mode)	0 Off 1 On (only in Stack Mode)	0 Off 1 On

8.7 Buzzer

The buzzer is available in art. no. **4000-76060-0000002** only.

The buzzer control function starts to control the buzzer once it receives a signal from the IO-Link process data, which relates to the parameter given below.

- Index 2001: Buzzer Sound Level
- Index 2030: Buzzer Pattern

Process data:

- Buzzer On/Off
- Buzzer Type
- Buzzer Loudness

Byte 5 or 21							
Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
Buzzer Loudness				Buzzer Type			Buzzer
0000 Use Index 2001 (Default 100 %) 0001 10 % 0010 20 % 0011 30 % 0100 40 % 0101 50 % 0111 60 % 1000 70 % 1001 80 % 1010 90 % 1100 100 %				000 Use Index 2030 (Default Continuous) 001 Intermittent 010 High and Low tones 011 Sweep 100 Continuous (500ms On/500ms Off) 101 Intermittent (500ms On/500ms Off) 110 High and Low tones (500ms On/500ms Off) 111 Sweep (500ms On/500ms Off)			00 Off 01 On

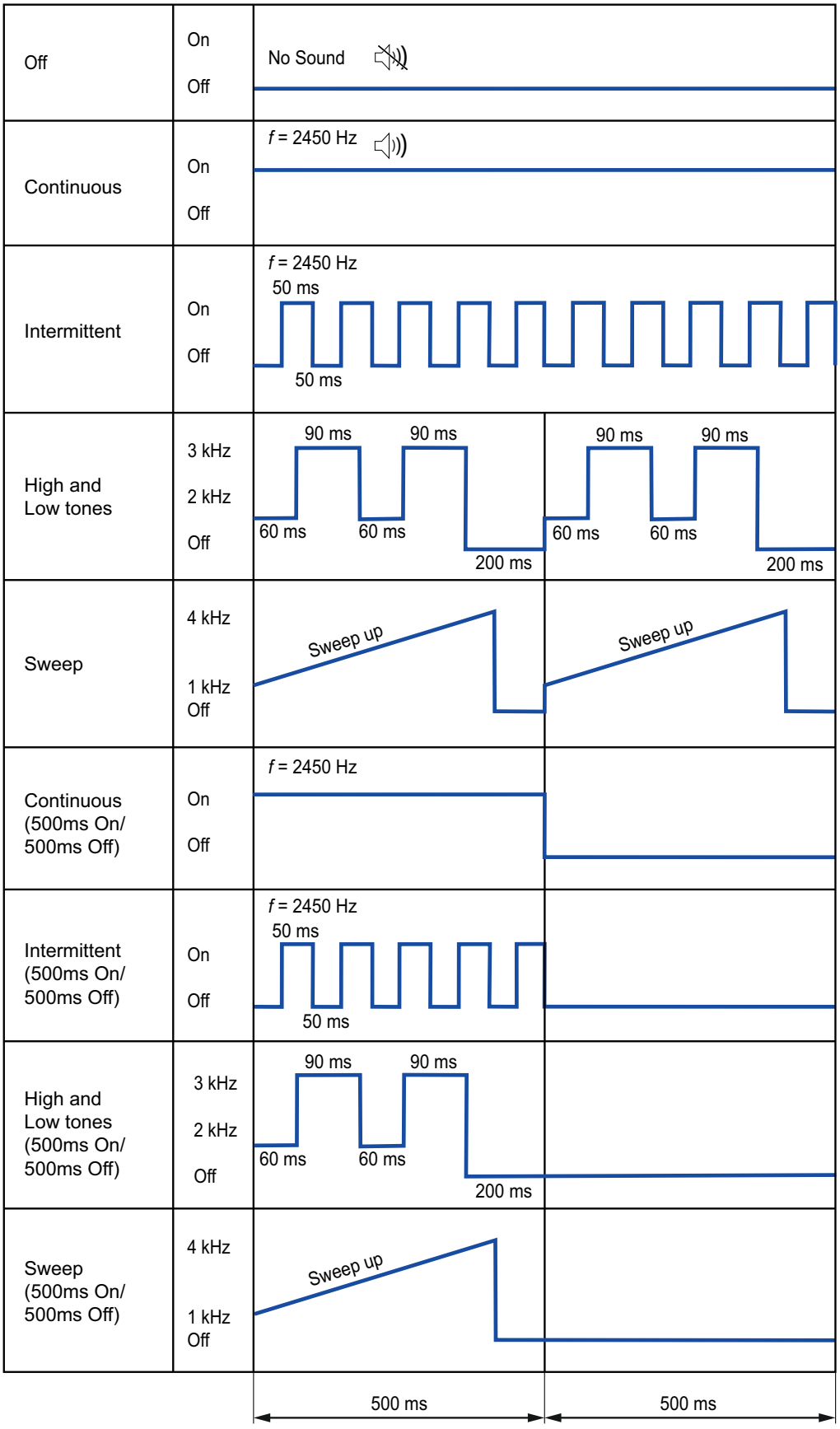


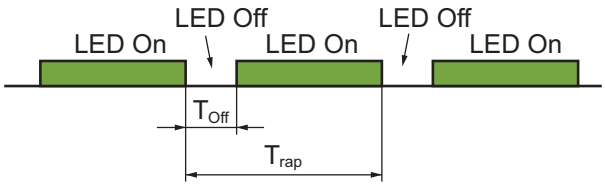
Fig. 8-2: Buzzer Pattern

8.8 IO-Link status LED

The IO-Link status-LED indicates the operating state. (In IO-Link mode only if the value of “0x07F8 (2040) IOL Status LED” is “0”.)

When in IO-Link mode, the device is in Operate and, thus, ready for data exchange with the master.

If the LED continuously lights up green, the device is not exchanging data. If pin 4 carries 24 V, the Demo mode is active.

Status	Timing	Diagram
IO-Link mode	90 % on 10 % off	
Demo mode	100 % on	

8.9 Troubleshooting

Troubleshoot problems that occur by following the instructions in the table below.

No.	Problem	Confirmation	Remedy
1	The LED does not light.	Is the processing data correct?	Please check Configuration and parameterization before submitting your process data.
		Are the parameters correct?	Please check Configuration and parameterization before set value.
		Is the electric wiring connected correctly?	Refer to Chap. 6 "Installation" for proper wiring.
		Is the power supply applied at the correct voltage?	Check voltage output from the connected IO-Link master.
2	The color of the LED differs from the desired color	Is the processing data correct?	Please check Configuration and parameterization before submitting your process data.
		Are the parameters correct?	Please check Configuration and parameterization before set value.
3	The buzzer does not sound.	Is the processing data correct?	Please check Configuration and parameterization before submitting your process data.
		Are the parameters correct?	Please check Configuration and parameterization before set value.
		Is the electric wiring connected correctly?	Refer to Chap. 6 "Installation" for proper wiring.
		Is the power supply applied at the correct voltage?	Check voltage output from the connected IO-Link master.

8.10 Demo mode

The Demo mode is activated when pin 1 and pin 4 carry (+24 V) and pin 3 carries (0 V). The Demo mode presents the following demo sequence:

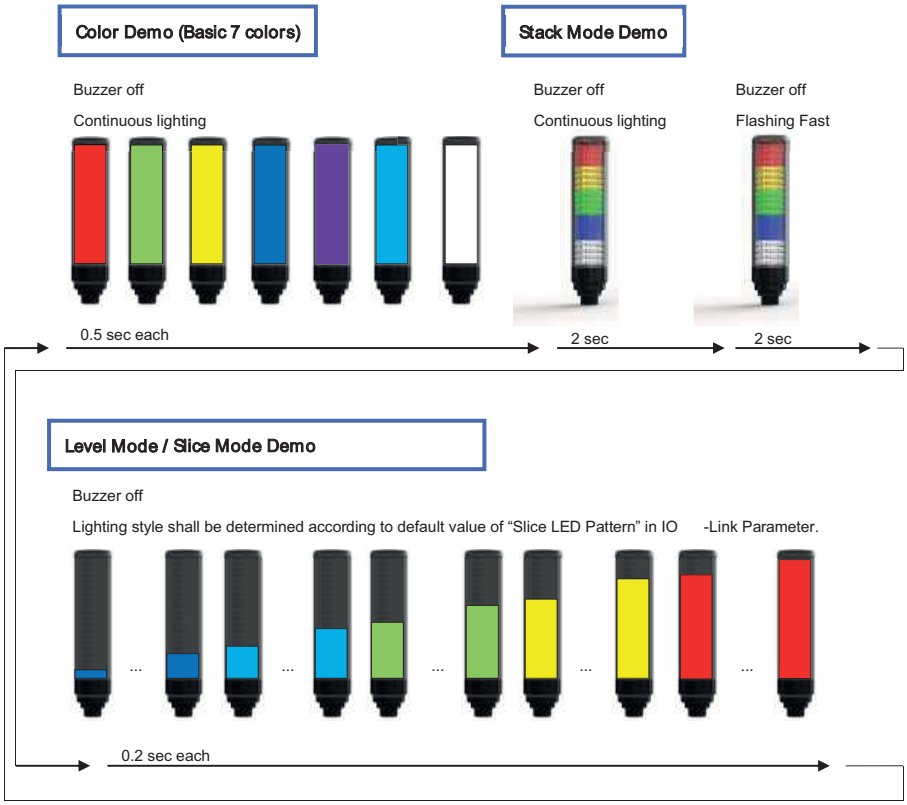


Fig. 8-3: Demo mode

9 Appendix

9.1 Accessories

Designation	Art.-No.
Wall mounting adapter suitable for Comlight56 and Mod-light60 Pro	4000-76056-0000903

PRODUCTS AND ACCESSORIES
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9.2 Glossary

Glossary
You can find explanations of the terms/abbreviations used at:
murrelektronik.com/products-industries/glossary/

10 Legal notes

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