GAG OPTRONIC

Control Technology and Sensors

Download the CMT Installer

You will find the latest PC version for the operating system Microsoft Windows at: <u>https://www.optronic.ch/download/sw/sensors/lvmc/cmt/lvmc_cmt_a2_latest_setup.exe</u>

Installing CMT

Run the downloaded installer. During installation, an icon is created on your desktop.

Power Supply

There are two possibilities to power the LVMC::

- via the D-Sub connector: see the pin assignment in the user manual
- via the Ethernet jack: Power over Ethernet (PoE) standard

Connection via USB

Connect your LVMC to your PC using a USB 2.0 cable.

Start CMT

Start the software by double-clicking on the newly created icon on the desktop.

Connecting with LVMC

Select entry "Connect to LVMC by USB" in the CMT menu "Communication". The connection to the LVMC will be established.



lvmc_cmt_a2_lat est_setup.exe

Explore CMT

N OPTRON	N OPTRONIC AG - LVMC CMT A2 V2.037 - LVMC100/100M3 (Seriennummer 38080)											
Datei Komi	atei Kommunikation Automatik Test Diverses Hilfe											
Konfiguratio	onfiguration Status Analyse Statistik & Automatik Fehlerspeicher											
Ethernet-K	onfiguration											
IP Adresse	192.168.1.100	IP Netzmaske	255.255.255.0	IP Standard-Gateway	192.168.1.1	DNS-Server	192.168.1.1	RC Schlüssel	1111-22	22-3333-444	4	
DHCP	aktiviert \sim	HTTP-Server	deaktiviert \sim	Fernsteuerung (RC)	deaktiviert \sim	UTC-Versatz	+1h	NTP-Server		pool.ntp.or	9	

Five pages are available to you:

- Configuration: Information about the connected LVMC and all configuration settings
- Status: Information about the device status

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- Analysis: Visualize and analyze detected objects
- Statistics & Automatic: Collected statistical data and information for automatic configuration

21 Covered

19 Covered

10 Covered

15

ered

• Error Log: Overview of all logged errors

Counting Objects

Channel Status

Channel 1: Detection Size

Channel 2: Detection Size

Channel 3: Detection Size

Channel 4: Detection Size

General Status Information

Each light curtain is already preconfigured and is immediately ready for use. Change to the status page. Hold

NO Passing Time:

NO Passing Time:

NO Passing Time:

an object in the sensing area for less than a second. The counter readings of the four counting channels are increased individually.

Count

0.5mm Count

4.2mm Count

8.8mm Count

1.4mm

			OPTRONIC	AG - LVN	ИС СМТА	21108 -	LVMC100/100M	13 (Serial Nu
		File	Commur	ication	/at	ic Test	Miscellaneous	Help
		Con	figuration	Status	Analysis	Statistic	s & Automatic	Error Log
Last	79ms98	80us	Minimum	23n	ns340us	Maximun	n 129ms660u	s
Last	79ms26	50us	Minimum	12n	ns 960 us	Maximun	n 128ms910u	s
Last	63ms50	70us	Minimum	24n	os840us	Maximun	127ms290u	5

NO Passing Time: Last 62ms160us Minimum 22ms290us Maximum 123ms540us

Observe the states of the output signals 1 to 3 *: They switch to "ON" or remain "OFF", depending on the size of the object. (*)Your device may has only one output signal.)

Genera	in Status III t	macon												
State	running	Run	2	Uptime		2h19mir	n10.8s	Last Sta	rt Before	2min22.0:	Date	10/25/21	Time	10:30:34
Output	1 (Monitori	ng 2): Sta	te 🚺 Ol	l Output	2: State	ON	Output	: 3: State	ON	I/O 1 (Output 4): State	ON	I/O 2 (Out;	out 5): St	ate <mark>ON</mark>

Change Settings

Switch to the Administrator Access Level: In the "Miscellaneous" menu, select entry "Switch to Administrator Access Level".

NOPTRONIC AG - LVMC CMT A2 V2.108 - LV	MC100/100M3 (Serial Number 38195)			
File Communication Automatic Test N	liscellaneous Help			
Configuration Status Analysis Statistic	Show Information about this LVMC		Ctrl-?	
Ethernet Configuration	Switch Language to German / Sprache auf	-		
IP Address 192.168.1.100 IP Netmask	Switch to Administrator Access Level		Ctrl-A	
DHCP Enabled V HTTP Serve	Set Administrator Password		er	
	Change CMT Password		-	
top the LVMC [.] Therefore u	press button "Ston"			
		Stop Store Configuration	Discard Changes	Reboot LV
hanges to the settings are	now possible.			51
estart the LVMC by pressi	ng button "Start"	Start	Discard Changes	Reboot LVM

Configure Counting Channels

The light curtain offers four configurable counting channels for the simultaneous detection of different objects: Use the gap suppression function to prevent multiple counts of translucent or complex shaped objects. Suppress the counting of unwanted small objects by specifying the minimum size, the minimum passing time, or the minimum area.

Channel Configuration	1								
Channel 1: Min. Size	1.0mm	Min. Passing Time	Qus	Min. Area	Ous*mm	Gap Suppression Time	Ous	Min. Expected Passing Time	0.0ms
Channel 2: Min. Size	2.0mm	Min. Passing Time	Ous	Min. Area	Ous*mm	Gap Suppression Time	Ous	Min. Expected Passing Time	0.0ms
Channel 3: Min. Size	5.0mm	Min. Passing Time	Ous	Min. Area	Ous*mm	Gap Suppression Time	Ous	Min. Expected Passing Time	0.0ms
Channel 4: Min. Size	10.0mm	Min. Passing Time	Ous	Min. Area	Ous*mm	Gap Suppression Time	Ous	Min. Expected Passing Time	0.0ms

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The use of the area offers great advantages. On the analysis page, you will find many values useful for parameterization, e.g. the minimum area of all captured objects.

Configuration Status Ar	nalysis Statistics & Automatic Error Lo	og				
Captured Sensor Image			Last Object			
			Minimum Size	1.0mm Passing	Time 2.76ms	Date 10/25/21
-0.28 0.00 0.31 0	0.62 0.94 1.25 1.56 1	.87 2.18 2.50	Maximum Size	2.5mm Area	4.67ms*mm	Time 12:15:18
0.00 +			All Objects			
			Object Count	2813	Estimated Speed	3.2km/h
0.35 -			Lowest Uncovered Time	0.66ms	Lowest Minimum Size	0.4mm
0.70			Lowest Passing Time	2.01ms	Lowest Maximum Size	1.6mm
0.70 -			Average Passing Time	2.80ms	Average Maximum Size	2.5mm
1.05 -			Highest Passing Time	5.61ms	Highest Maximum Size	5.1mm
			Minimum Area	3.22ms*mm	Average Area	4.92ms*mm
1.40 -			Maximum Area	11.50ms*mm		

Each object is captured and analyzed in detail by the sensor in high resolution. It is displayed graphically on the analysis page.

Selection of the Object Detection Method

Select the object detection method that is best for you: In mode "separately", each channel works independently, just like in the LV..M light curtain, the predecessor of the LVMC. In mode "combined", an object is assigned to only one channel. The LVMC thus offers the possibility to classify objects, even self-learning in automatic mode.

Sensor Configuration	
Object Detection Method	Each channel separately, when object is leaving the sensing area
State 'Stopped' Notification: Method	Each channel separately, while object within sensing area Each channel separately, when object is entering the sensing area
Sensing Area Static Coverage Size	Each channel separately, when object is leaving the sensing area All channels combined, manual mode, when object is leaving the sensing area
Channel Configuration	All channels combined, automatic mode, when object is leaving the sensing area

Automatic Parameterization in Automatic Mode

Test the integrated automatic mode! The LVMC parameterizes itself independently by continuously analyzing the passing objects. The minimum areas and the gap suppression time of the channels are determined automatically. They are shown to you on the configuration page.

-Automatic Mod	le Config	uration													
Starting Count	25	Preset Values		Quantity	100	Gap Suppressio	oression 🗹 Time			Ous Captured		ntity	0	Average Area	Ous*mm
Bad Rate	1.0%	Rolling	\checkmark	Quantity	1000	Self-Restart	\checkmark	Delay		10min	Minimum Are	as	Bus*mm	999999.99s*mm	99999,99s*mm
Channel Config	uration														
Channel 1: Mini	Channel 1: Minimum Size 1.0mm Minimum Area					ea	Ous*mn	n Ga	p Suppres	sion Tim	e	Ous			
Channel 2: Mini	Minimum Size 1.0mm Minimum Area			ea 2.8	5ms*mm Gap Suppression Time				e	180us					
Channel 3: Mini	hannel 3: Minimum Size 1.0mm Mini		linimum Ar	ea 6.6	6.68ms*mm		Suppression Time		e	180us	K				
Channel 4: Mini	el 4: Minimum Size 1.0mm Minimum Area		ea 11.4	āms*mn	n Ga	p Su _{Pr} is	sion Tim	e	180us						
I/O Configuratio	on														
Output 1: Assign	ment	Monitoring 2 (L	VMC	Operation	nal)		Polarit	y po	sitive						
Output 2: Assign	ment	Object Stuck				\sim	Polarit	y pos	sitive \sim						
Output 3: Assign	ment /	All Channels: Detection, Pulse-Coded, w/o Channel 1			o Channel 1 \sim	Polarit	y pos	sitive \sim	Once	Duration	10.0ms	Offset	0.0ms		
I/O 1: Assignmer	nt (Channel 1: Dete	ction			~	Polarit	y pos	sitive \sim	Once	Duration	10.0ms	Offset	0.0ms	
I/O 2: Assignmer	nt /	Automatic Mod	le Res	start		\sim	Edge	pos	sitive \sim						

On the status page you can follow the counter readings of the channels. Channel 2 counts objects with the correct size, channel 1 too small ones. Channels 3 and 4 count objects that are too large, or those of the correct size that have passed the sensing are too closely.

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Channel Status												
Channel 1: Detection Size	0.5mm	Count	4	Covered	NO	Last Passing Time	2ms190us	Minimum	2ms 190 us	Maximum	2ms190us	
Channel 2: Detection Size	0.5mm	Count	1744	red	NO	Last Passing Time	2ms550us	Minimum	2ms70us	Maximum	3ms420us	
Channel 3: Detection Size	0.5mm	Count	16	Covered	NO	Last Passing Time	3ms630us	Minimum	3ms120us	Maximum	6ms150us	
Channel 4: Detection Size	0.5mm	Count	1	Covered	NO	Last Passing Time	4ms110us	Minimum	4ms110us	Maximum	4ms110us	

On the "Statistics & Automatic" page, a histogram gives you information about the measured object areas. In addition, statistical data is displayed.



Loading a Default Configuration

Four default configurations are available to choose from. Select entry "Restore Default Configuration" in menu "File". The easiest way to start is with the one that best suits your needs.

Select Default Configuration to Restore	×
Available Default Configurations	
Abort Restore	

Using Tool-Tipps

Activate showing Tool-Tips in menu "Help". Hold the mouse pointer briefly on a display element: Explanations of how it works are displayed.



General	Status Info	rmation												
State	stopped	Run	2	Uptime	2h38min53.7s	Last Start Before		Date	10/25/21	Time	10:50:17			
Output	I (M Show	s if the LVMC	is runr	ning or sto	pped.		II		1			1		
Etherne	Ethernet Sta enters state 'running', if no error occurs.													
IP Addre	ss 192.	168.200.216	IP Net	mask	255.255.255.0 IP Defa	ult Gateway 1	92.168.200.1 DNS Serve	r	192.168.200	1 NTP	Server	192.168.200.1		

Download the User Manual

You will find the latest user manual at: <u>https://www.optronic.ch/download/doc/sensors/Light_Curtain_LVMC_User_Manual.pdf</u>

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