

# MLC420/421/422, MLC430, MLC433, MLC437, MLC490/491/492

## Ёмкостные сигнализаторы уровня

### GHM MESSTECHNIK



## Технические характеристики

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# Capacitive Level Switch MLC420/422

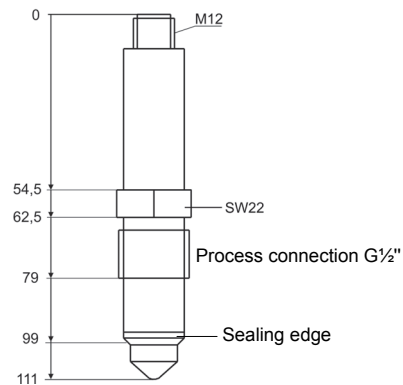


- 2-port isolation
- Microprocessor controlled measurement
- Parametrization via GHMware and adapter EYY120
- No moving parts in the medium
- Switching function depends to the polarity of the supply voltage
- Condensate-stability type

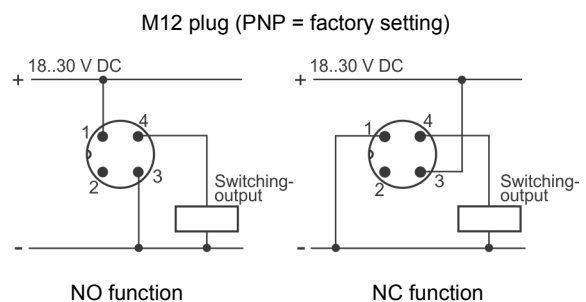
## Technical data

<b>Power supply</b>	
Supply voltage	: 18..30 V DC, max. 50 mA
Electrical connection	: M12x1 plug
CE-conformity	: EN 61326:2007-05
<b>Ambient conditions</b>	
Ambient temperature	: -20..+80 °C
Climatic class	: EN 60068-2-38:2010-06
Vibration class	: EN 60068-2-6, GL test2
<b>Certifications</b>	
EHEDG certificate no.	: 28/2011
<b>Sensor</b>	
Radiated frequency	: 40.68 MHz, <1 mW
Measuring range	: DK-value 5..175 (MLC420) DK-value 1..175 (MLC422)
Factory setting	: DK-value = 20 (MLC420) DK-value = 1 (MLC422)
Initialization time	: 3 s
Process temperature	: -20..+100 °C, 140 °C < 30 min CIP-/SIP-capable
Process pressure	: -1..10 bar
Process material	: PEEK, FDA approval number 21CFR177.2415 food-safe acc. to EHEDG Conform regulation EC 1935/2004 & 10/2011
Surface quality	: $R_a \leq 0,8\mu\text{m}$
Process connection	: G1/2" hygienic
Stud torque	: 5..10 Nm
Mounting direction	: arbitrary, see mounting notes
<b>Output</b>	
Switching output	: transistor PNP / NPN max. 30 V / 100 mA
Response time	: programmable from 0.01..10 s
Isolation	: sensor, case/supply, outputs
<b>Case</b>	
Material	: 1.4305
Protection class	: IP67 / IP69K

## Dimension



## Connection diagram



Cable colors: 1 = brown, 2 = white, 3 = blue, 4 = black

## Ordering code

1.    2.    3.    4.    5.    6.  
MLC42  -  -  -  -  -

<b>1. Measuring range</b>	
0	DK-value 5..175
2	DK-value 1..175
<b>2. Switching output</b>	
0	PNP (standard)
1	NPN
<b>3. Electrical connection</b>	
0	M12-plug
<b>4. Inspection window</b>	
0	without window
<b>5. Options</b>	
00	without option
<b>6. Certificate DIN EN 10204 (indicate only when required, multiple responses possible)</b>	
RA08	$R_a < 0,8\mu\text{m}$ (with acceptance test certificate 3.1 incl. measurement report)
RA06	$R_a < 0,6\mu\text{m}$ (with acceptance test certificate 3.1 incl. measurement report)
WZ2.2	factory certification 2.2
APZMAT	acceptance test certificate 3.1 for material (in contact with products)

## Accessories:

ACH connection cable  
APH process connection  
see separate product information **GHMadapt/Accessories**.  
EYY120 Programming adapter

# Capacitive Level Switch MLC430



- 2-port isolation
- Microprocessor controlled measurement
- Parametrization via GHMware and internal Mini USB interface
- No moving parts in the medium
- 2 switching outputs
- Switching functions programmable
- Condensate-stability type
- Ultra-wide LED indicator

## Technical data

### Power supply

Supply voltage : 18..30 V DC, max. 80 mA  
 Electrical connection : M12x1 plug or cable gland M16x1.5  
 CE-conformity : EN 61326:2007-05

### Ambient conditions

Ambient temperature : -20..+80 °C  
 Climatic class : EN 60068-2-38:2010-06  
 Vibration class : EN 60068-2-6, GL test2

### Certifications

EHEDG certificate no. : 28/2011

### Sensor

Radiated frequency : 40.68 MHz, <1 mW  
 Measuring range : DK-value 1..175  
 Initialization time : 3 s  
 Process temperature : -20..+100 °C, 140 °C < 30 min  
 CIP-/SIP-capable

Process pressure : -1..10 bar  
 Process material : PEEK, FDA approval number 21CFR177.2415  
 food-safe acc. to EHEDG conform regulation EC 1935/2004 & 10/2001

Process connection : G1/2" hygienic  
 Stud torque : 5..10 Nm  
 Mounting direction : arbitrary, see mounting notes

### Output

Switching output : transistor PNP / NPN  
 max. 30 V / 100 mA  
 LED indicator S1, S2 : S1active = green, S2 active = red  
 S1+S2 active = mixed color

Response time : programmable in range 0.02..10 s  
 Isolation : sensor, case/supply, output

Case : SS-type round case 59 mm

LED-cap : Acrylic glass (PMMA)

Material : 1.4305

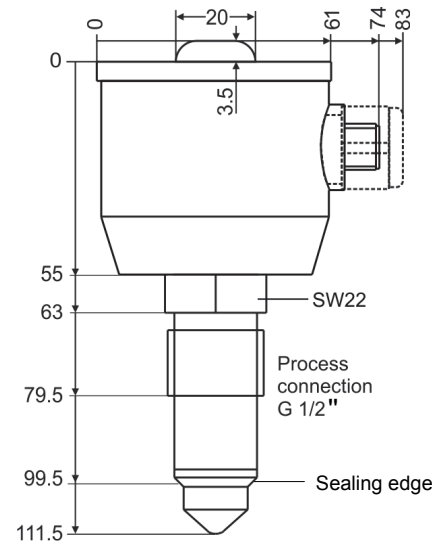
Protection class : IP67 / IP69K

**Martens**

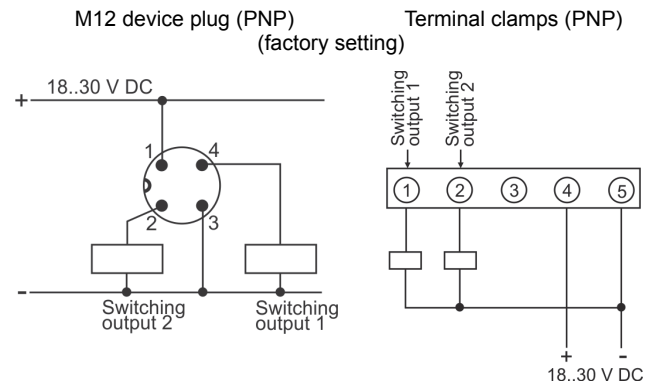
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Capacitive Level

## Dimension



## Connection diagrams



Cable colors (plug):  
 1 = brown, 2 = white, 3 = blue, 4 = black

# Capacitive Level Switch MLC433



- 2-port isolation
- Microprocessor controlled measurement
- Parametrization via GHMware and internal Mini USB interface
- No moving parts in the medium
- 2 switching outputs
- Analog output for DK value
- Switching functions programmable
- Condensate-stability type
- Ultra-wide LED indicator

## Technical data

### Power supply

Supply voltage : 18..30 V DC, max. 100 mA  
Electrical connection : M12x1 plug or cable gland M16x1.5  
Polyamide (PA) or SS-type 1.4305

CE-conformity : EN 61326:2007-05

### Ambient conditions

Ambient temperature : -20..+60 °C  
Climatic class : EN 60068-2-38:2010-06  
Vibration class : EN 60068-2-6, GL test2

### Certifications

EHEDG certificate no. : 28/2011

### Sensor

Radiated frequency : 40.68 MHz, <1 mW  
Measuring range : DK-value 1.5..175  
Initialization time : 3 s  
Process temperature : -20..+100 °C, 140 °C < 30 min  
CIP-/SIP-capable  
Process pressure : -1..+10 bar  
Process material : PEEK, FDA approval number 21CFR177.2415  
food-safe according to EHEDG conform regulation EC 1935/2004 & 10/2001

Process connection : G1/2" hygienic

Stud torque : 5..10 Nm

Mounting direction : arbitrary,  
see mounting notes

### Outputs

Switching output : transistor PNP / NPN programmable  
max. 30 V / 100 mA

LED indicator S1, S2 : S1 active = green, S2 active = red  
S1+S2 active = mixed color

Response time : 20 ms

Analog output : active 0/4..20 mA, burden <600 Ω

Response time : programmable from 0.1..10 s

Isolation : sensor, case / supply, outputs

### Case

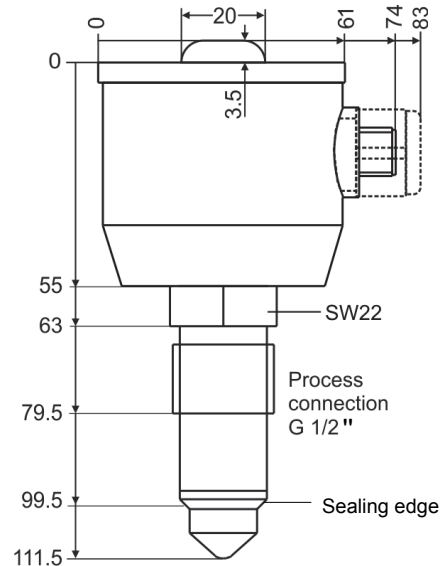
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Hygienic Design

Material : 1.4305  
LED-cap : Acrylic glass (PMMA)  
Protection class : IP67 / IP69K

## Dimension

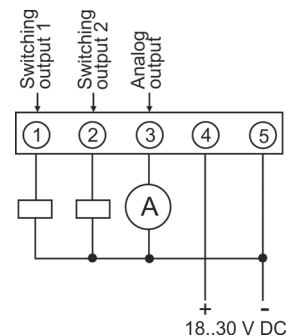
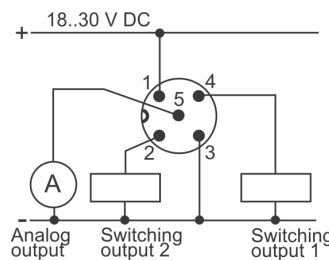


## Connection diagram

M12 device plug (PNP)

(factory setting)

Terminal clamps (PNP)



Cable colors (plug):

1 = brown, 2 = white, 3 = blue, 4 = black, 5 = grey

# Capacitive Level Switch MLC437

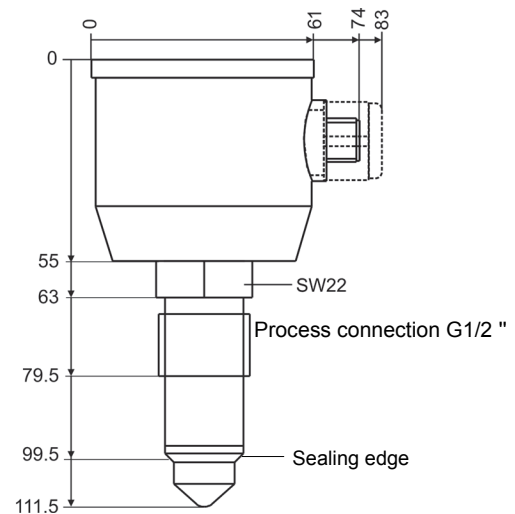


- 2-port isolation
- Microprocessor controlled measurement
- Parametrization via build-in display and GHMware with Mini USB interface
- No moving parts in the medium
- 2 switching outputs
- Analog output for DK value
- Switching functions programmable
- Condensate-stability type

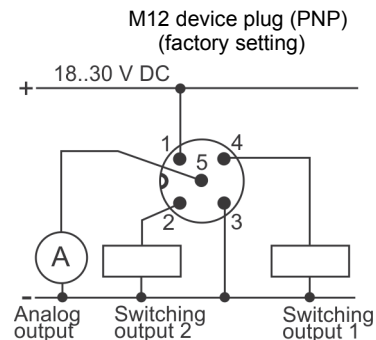
## Technical data

<b>Power supply</b>	
Supply voltage	: 18..30 V DC, max. 100 mA
Electrical connection	: M12x1 plug
CE-conformity	: EN 61326:2007-05
<b>Ambient conditions</b>	
Ambient temperature	: -20..+60 °C
Climatic class	: EN 60068-2-38:2010-06
Vibration class	: EN 60068-2-6, GL test2
<b>Certifications</b>	
EHEDG certificate no.	: 28/2011
<b>Sensor</b>	
Radiated frequency	: 40.68 MHz, <1 mW
Measuring range	: DK-value 1.5..175
Initialization time	: 3 s
Process temperature	: -20..+100 °C, 140 °C < 30 min CIP-/SIP-capable
Process pressure	: -1..+10 bar
Process material	: PEEK, FDA approval number 21CFR177.2415 food-safe according to EHEDG conform regulation EC 1935/2004 & 10/2011
Process connection	: G1/2" hygienic
Stud torque	: 5..10 Nm
Mounting direction	: arbitrary, see mounting notes
<b>Outputs</b>	
Switching output	: transistor PNP / NPN programmable max. 30 V / 100 mA
Response time	: 20 ms
Analog output	: active 0/4..20 mA, burden <600 Ω
Response time	: programmable from 0.1..10 s
Isolation	: sensor, case / supply, outputs
<b>Case</b>	
Material	: 1.4305
Display window	: Acrylic glass (PMMA)
Protection class	: IP67 / IP69K

## Dimension



## Connection diagram



Cable colors:  
1 = brown, 2 = white, 3 = blue, 4 = black, 5 = gray

## Ordering code

MLC437 -  1. -  2. -  3. -  4. -  5.

<b>1. Outputs</b>	
0	2x PNP / NPN programmable and 1x analog output 0/4..20 mA
<b>2. Electrical connection</b>	
0	M12 plug
<b>3. Inspection window</b>	
0	cap with window for LC display
<b>4. Options</b>	
00	without option
01	measuring range optimized for media (Dk 1...4)
02	internal fixing element stainless steel
<b>5. Certificate DIN EN 10204 (indicate only when required, multiple responses possible)</b>	
RA08	$R_a < 0,8\mu\text{m}$ (with acceptance test certificate 3.1 incl. measurement report)
RA06	$R_a < 0,6\mu\text{m}$ (with acceptance test certificate 3.1 incl. measurement report)
WZ2.2	factory certification 2.2
APZMAT	acceptance test certificate 3.1 for material (in contact with products)
<b>Accessory</b>	
ACI211	USB connection cable for programming MLC43x

### Additional accessories:

ACH connection cables

APH process connection

See separate product information **GHMadapt/Accessories**.

# Capacitive Level Switch MLC490/492

**Martens**

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**Hygienic Design**



GHMware

## Sensor

Radiated frequency	: 40.68 MHz, <1 mW
Measuring range	: DK-value 5..175 MLC490 DK-value 1..175 MLC492
Factory setting	: DK-value = 20 (MLC490) DK-value = 1 (MLC492)
Initialization time	: 3 s
Process temperature	: -20..+80 °C 100 °C < 60 min CIP-capable *
Process pressure	: -1..+10 bar
Process material	: 1.4404, PEEK, FDA approval number 21CFR177.2415
Surface quality	: $R_a \leq 0,8\mu\text{m}$
Process connection	: G1" hygienic
Stud torque	: 10..20 Nm
Mounting length	: min. 130 mm; max. 1000 mm
Mounting direction	: arbitrary, see mounting notes

## Output

Switching output	: transistor PNP or NPN max. 30 V / 100 mA
Response time	: programmable from 0.01..10 s
Isolation	: sensor, case/supply, outputs
Case	: SS-type round case
Material	: 1.4305
Protection class	: IP67 / IP69K

\* For sterilisation processes with more than 100°C the device must be cut off from the power supply.

- Galvanic isolation
- Microprocessor controlled measurement
- Parametrization via GHMware and adapter EYY120
- No moving parts in the medium
- Switching function depends to the polarity of the supply voltage
- Condensate-stability type

## Technical data

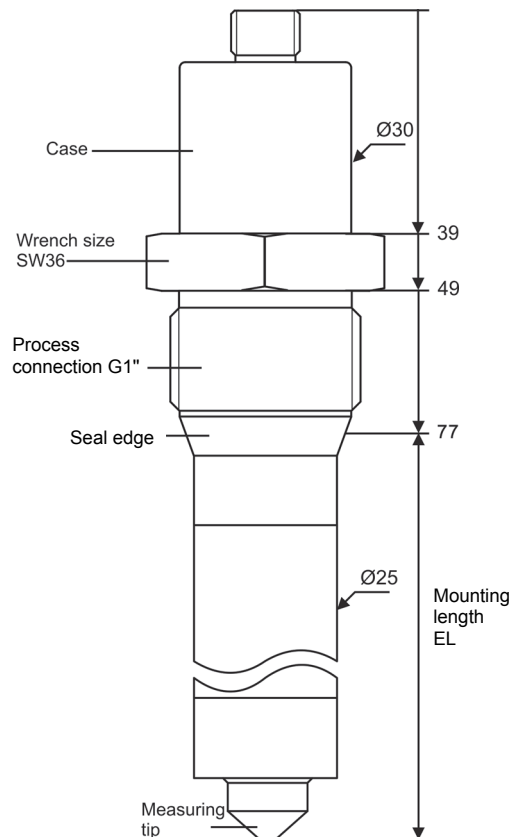
### Power supply

Supply voltage	: 18..30 V DC, max. 50 mA
Electrical connection	: M12x1 plug
CE-conformity	: EN 61326:2007-05

### Ambient conditions

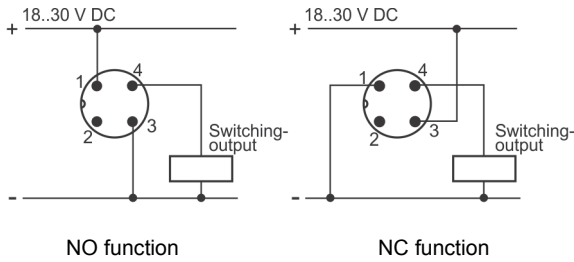
Ambient temperature	: -20..+80 °C
Storage temperature	: -20..+105 °C
Climatic class	: EN 60068-2-38:2010-06
Vibration class	: EN 60068-2-6, GL test2

## Dimensions



## Connection diagram

M12 plug (PNP)  
(factory setting)



Cable colors:

1 = brown, 2 = white, 3 = blue, 4 = black

## Ordering code

MLC49  1.  2.  3.  4.  5.  6.  7.

<b>1. Measuring range</b>	
0	DK-value 5..175
2	DK-value 1..175
<b>2. Mounting length EL [mm]</b>	
130	
200	
300	
400	
500	
600	
700	
800	
900	
1000	
XXX	custom length min. 130 mm, max. 1000 mm
<b>3. Switching output</b>	
0	PNP (standard)
1	NPN
<b>4. Electrical connection</b>	
0	M12-plug
<b>5. Inspection window</b>	
0	without window
<b>6. Options</b>	
00	without option
11	
<b>7. Certificate DIN EN 10204 (indicate only when required, multiple responses possible)</b>	
RA08	$R_a < 0,8\mu\text{m}$ (with acceptance test certificate 3.1 incl. measurement report)
RA06	$R_a < 0,6\mu\text{m}$ (with acceptance test certificate 3.1 incl. measurement report)
WZ2.2	factory certification 2.2
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### Accessories:

ACH connection cables

APH process connection

see separate product information **GHMadapt/Accessories**.

EYY120 Programming adapter

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