

# Sensors and Systems

Edition 3.0



Your automation, our passion.

**pf** PEPPERL+FUCHS



### Properties

- Ø18 mm housing
- Wide range double sheet detection
- Very fast response
- DC, 3 switching outputs
- Cable version

### Your Benefit

- 400-series is designed for detection of the broadest range of materials (typically paper)
- One sensor identifies zero-, single- and double-sheets

## Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

### General Data

Sensing range	20 ... 60 mm , optimal distance: 45 mm
Transducer frequency	395 kHz
Operating voltage	18 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	< 80 mA
Rated operational current	3 x 100 mA , short-circuit/overload protected
Switch-on delay	approx. 15 ms (shorter response time on request)
Switch-off delay	approx. 15 ms (shorter response time on request)
Pulse extension	min. 120 ms programmable
Input type	Function input
LED green	indication: single sheet detected
LED yellow	indication: No sheet detected (Air)
LED red	indication: double sheet detected
Ambient temperature	0 ... 60 °C (32 ... 140 °F)
Material	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Protection degree	IP67
Connection type	cable PVC , 2 m



### Model Number

	UDC-18GM-400-3E1	UDC-18GM-400-3E2	UDC-18GM-400-3E3
Output type	3 switch outputs NPN, NC		
	3 Switch outputs PNP, NC		
	3 switch outputs PNP, NO		

### Approvals and Certificates

		UDC-18GM-400-3E1	UDC-18GM-400-3E2	UDC-18GM-400-3E3
UL approval	cULus Listed, General Purpose, Class 2 Power Source	●	●	●
CSA approval	cCSAus Listed, General Purpose, Class 2 Power Source	●	●	●

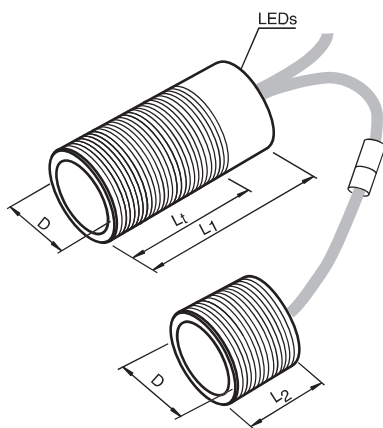
### Dimensions

Receiver length L1 [mm]	74
Emitter length L2 [mm]	22
Diameter D [mm]	18
Receiver thread length l <sub>t</sub> [mm]	45

### Accessories

This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets    See pages 1068 ... for mounting aids

UDB-Cable-2M	Extension cable
MH-UDB01	Mounting bracket for double sheet monitor
UDB-Cable-1M	Extension cable

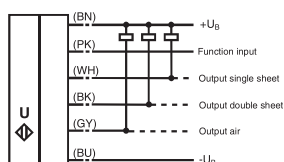


## Electrical Connection



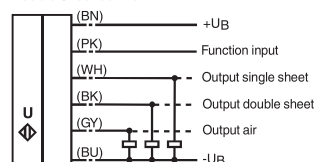
UDC-18GM-400-3E1

Standard symbol/Connection:  
Double sheet control



UDC-18GM-400-3E2  
UDC-18GM-400-3E3

Standard symbol/Connection:  
Double sheet control



Date of issue 2015-04-08



### Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

#### General Data

Sensing range	20 ... 60 mm , optimal distance: 45 mm
Transducer frequency	395 kHz
Operating voltage	18 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	< 80 mA
Rated operational current	3 x 100 mA , short-circuit/overload protected
Switch-on delay	approx. 15 ms (shorter response time on request)
Switch-off delay	approx. 15 ms (shorter response time on request)
Pulse extension	min. 120 ms programmable
Input type	Function input
LED green	indication: single sheet detected
LED yellow	Indication: No sheet detected (Air)
LED red	indication: double sheet detected
Ambient temperature	0 ... 60 °C (32 ... 140 °F)
Material	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Protection degree	IP67
Connection type	cablе PVC , 2 m



### Properties

- Ø18 mm housing with mounting bracket
- Wide range double sheet detection
- Very fast response
- DC, 3 switching outputs
- Cable version

### Your Benefit

- 400-series is designed for detection of the broadest range of materials (typically paper)
- One sensor identifies zero-, single- and double-sheets

#### Model Number

Output type	3 switch outputs NPN, NC	UDC-18GMA-400-3E1	UDC-18GMA-400-3E3
	3 switch outputs PNP, NC	●	●

#### Approvals and Certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source	●	●
CSA approval	cCSAus Listed, General Purpose, Class 2 Power Source	●	●

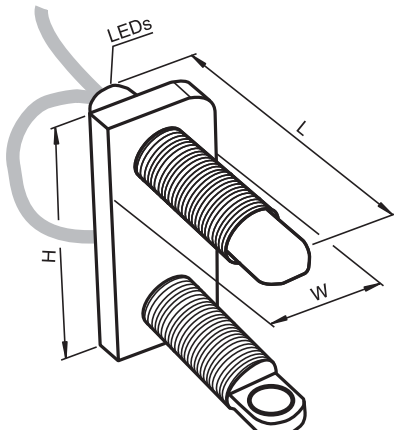
#### Dimensions

Length L [mm]	87
Diameter D [mm]	18
Height H [mm]	86
Width W [mm]	36

### Accessories This and more accessories can be found in chapter 3.5 from page 673

- UDB-Cable-2M Extension cable
- UDB-Cable-1M Extension cable

See pages from 972 ... for cordsets    See pages 1068 ... for mounting aids

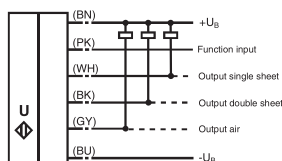


### Electrical Connection



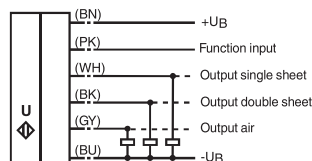
UDC-18GMA-400-3E1

Standard symbol/Connection:  
Double sheet control



UDC-18GMA-400-3E3

Standard symbol/Connection:  
Double sheet control





### Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

#### General Data

Sensing range	20 ... 60 mm , optimal distance: 45 mm
Transducer frequency	395 kHz
Operating voltage	18 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	< 50 mA
Rated operational current	3 x 100 mA , short-circuit/overload protected
Switch-on delay	approx. 15 ms (shorter response time on request)
Switch-off delay	approx. 15 ms (shorter response time on request)
Pulse extension	min. 120 ms programmable
Input type	Function input
LED green	indication: single sheet detected
LED yellow	Indication: No sheet detected (Air)
LED red	indication: double sheet detected
Ambient temperature	0 ... 60 °C (32 ... 140 °F)
Material	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Protection degree	IP67
Connection type	cable PVC , 2 m



### Properties

- Short Ø18 mm housing
- Wide range double sheet detection
- Very fast response
- DC, 3 switching outputs
- Cable version

### Your Benefit

- Short-barrel design
- 400-series is designed for detection of the broadest range of materials
- One sensor identifies zero-, single- and double-sheets

#### Model Number

	UDC-18GM50-400-3E1	UDC-18GM50-400-3E2	UDC-18GM50-400-3E0	UDC-18GM50-400-3E3
Output type	3 switch outputs NPN, NC			
	3 switch outputs NPN, NO			
	3 switch outputs PNP, NC			
	3 switch outputs PNP, NO			

#### Approvals and Certificates

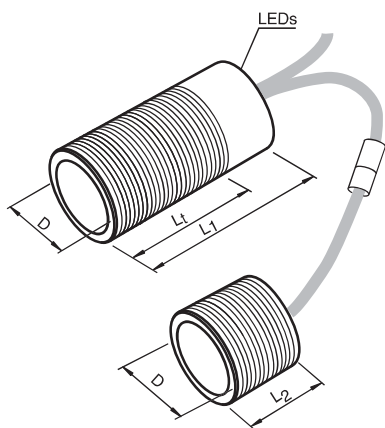
UL approval	cULus Listed, General Purpose, Class 2 Power Source	●	●	●	●
CSA approval	cCSAus Listed, General Purpose, Class 2 Power Source	●	●	●	●

#### Dimensions

Receiver length L1 [mm]	53
Emitter length L2 [mm]	22
Diameter D [mm]	18
Receiver thread length l <sub>t</sub> [mm]	30

**Accessories** This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

MH-UDB01	Mounting bracket for double sheet monitor
UDB-Cable-2M	Extension cable
UDB-Cable-1M	Extension cable

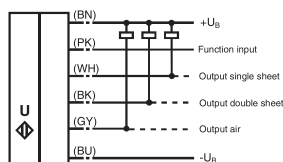


### Electrical Connection



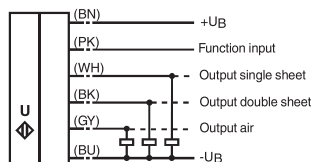
UDC-18GM50-400-3E1  
UDC-18GM50-400-3E0

Standard symbol/Connection:  
Double sheet control



UDC-18GM50-400-3E2  
UDC-18GM50-400-3E3

Standard symbol/Connection:  
Double sheet control



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### Properties

- Short Ø18 mm housing
- Wide range double sheet detection
- Very fast response
- DC, 3 switching outputs
- Cable version

### Your Benefit

- Short-barrel design
- 255-series is designed for detection of the materials too thick for 400-series monitoring
- One sensor identifies zero-, single- and double-sheets

## Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

### General Data

Sensing range	20 ... 60 mm , optimal distance: 45 mm
Transducer frequency	255 kHz
Operating voltage	18 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	< 50 mA
Rated operational current	3 x 100 mA , short-circuit/overload protected
Switch-on delay	approx. 15 ms (shorter response time on request)
Switch-off delay	approx. 15 ms (shorter response time on request)
Pulse extension	min. 120 ms programmable
Input type	Function input
LED green	indication: single sheet detected
LED yellow	Indication: No sheet detected (Air)
LED red	indication: double sheet detected
Ambient temperature	0 ... 60 °C (32 ... 140 °F)
Material	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Protection degree	IP67
Connection type	cable PVC , 2 m



Model Number	UDC-18GM50-255-3E1	UDC-18GM50-255-3E0	UDC-18GM50-255-3E3
Output type	3 switch outputs NPN, NC		
	3 switch outputs NPN, NO		
	3 switch outputs PNP, NC		

### Approvals and Certificates

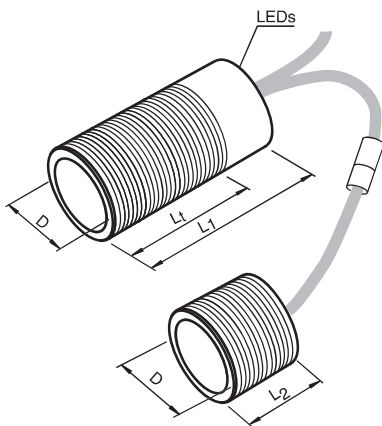
UL approval	cULus Listed, General Purpose, Class 2 Power Source	●	●	●
CSA approval	cCSAus Listed, General Purpose, Class 2 Power Source	●	●	●

### Dimensions

Receiver length L1 [mm]	53
Emitter length L2 [mm]	22
Diameter D [mm]	18
Receiver thread length l <sub>t</sub> [mm]	30

### Accessories This and more accessories can be found in chapter 3.5 from page 673 See pages from 972 ... for cordsets    See pages 1068 ... for mounting aids

<b>UDB-Cable-2M</b>	Extension cable
<b>MH-UDB01</b>	Mounting bracket for double sheet monitor
<b>UDB-Cable-1M</b>	Extension cable

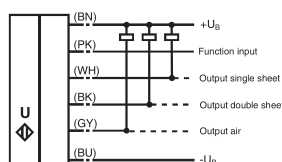


## Electrical Connection



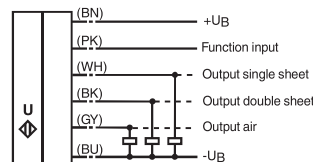
UDC-18GM50-255-3E1  
UDC-18GM50-255-3E0

Standard symbol/Connection:  
Double sheet control



UDC-18GM50-255-3E3

Standard symbol/Connection:  
Double sheet control



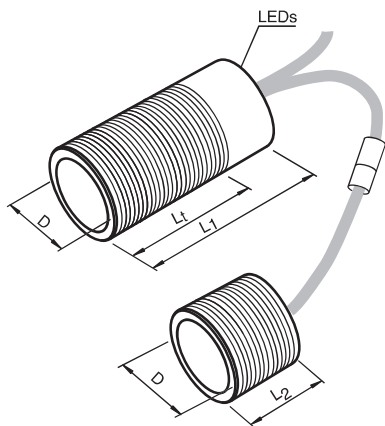


### Properties

- Short Ø18 mm housing
- Universal double material detection
- Fast response
- DC, 3 switching outputs
- Cable version

### Your Benefit

- Short-barrel design
- 255S-series offers the maximum power possible in the 18 mm diameter housing
- Excellent for plastics (credit card thickness), cardboard and thin metals
- One sensor identifies zero-, single- and double-sheets



### Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

#### General Data

Sensing range	40 ... 100 mm optimal distance 75 mm
Transducer frequency	255 kHz
Operating voltage	18 ... 30 V DC, ripple 10 % <sub>SS</sub>
No-load supply current	< 65 mA
Rated operational current	3 x 100 mA, short-circuit/overload protected
Switch-on delay	approx. 70 ms
Switch-off delay	approx. 70 ms
Pulse extension	min. 120 ms programmable
Input type	Function input
LED green	Indicator: single material detected
LED yellow	Indicator: no material detected (air)
LED red	Indicator: double material detected
Ambient temperature	0 ... 60 °C (32 ... 140 °F)
Material	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Protection degree	IP67
Connection type	cable PVC, 2 m



#### Model Number

	UDC-18GM50-255S-3E0	UDC-18GM50-255S-3E1	UDC-18GM50-255S-3E3
Output type			
3 switch outputs NPN, NC	●	●	
3 switch outputs NPN, NO			●
3 switch outputs PNP, NC			

#### Approvals and Certificates

	UDC-18GM50-255S-3E0	UDC-18GM50-255S-3E1	UDC-18GM50-255S-3E3
UL approval	●	●	●
CSA approval	●	●	●

#### Dimensions

Receiver length L1 [mm]	53
Emitter length L2 [mm]	40
Diameter D [mm]	18
Receiver thread length l <sub>t</sub> [mm]	30

**Accessories** This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

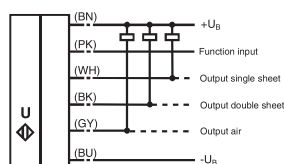
<b>UDB-Cable-2M</b>	Extension cable
<b>MH-UDB01</b>	Mounting bracket for double sheet monitor
<b>UDB-Cable-1M</b>	Extension cable

### Electrical Connection



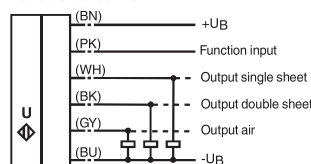
UDC-18GM50-255S-3E0  
UDC-18GM50-255S-3E1

Standard symbol/Connection:  
Double sheet control



UDC-18GM50-255S-3E3

Standard symbol/Connection:  
Double sheet control



Date of issue 2015-04-08



## Properties

- Short Ø18 mm housing
- Universal splice detection
- Extraordinary fast response
- DC, 2 switching outputs
- Cable version

## Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

### General Data

Sensing range	20 ... 60 mm , optimal distance: 45 mm
Transducer frequency	255 kHz
Operating voltage	18 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	< 60 mA
Rated operational current	2 x 100 mA , short-circuit/overload protected
Switch-on delay	≤ 600 µs
Switch-off delay	≤ 600 µs
Pulse extension	≥ 120 ms programmable
Input type	TEACH-IN input
LED green	Display: readiness
LED yellow	Display: splice detected
LED red	Indication: No sheet detected (Air)
Ambient temperature	0 ... 60 °C (32 ... 140 °F)
Material	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Protection degree	IP67
Connection type	2 m cable PVC , 2 m



### Model Number

Output type	2 switch outputs NPN, NC	UGB-18GM50-255-2E3	UGB-18GM50-255-2E1
	2 switch outputs PNP, NC	●	●

### Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●

### Dimensions

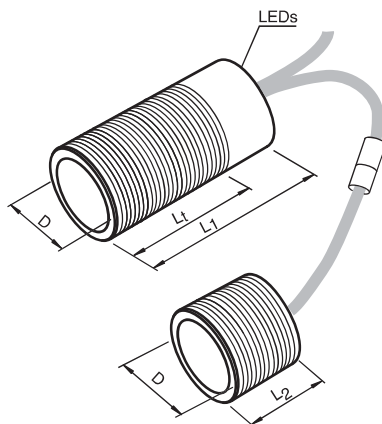
Receiver length L1 [mm]	53
Emitter length L2 [mm]	22
Diameter D [mm]	18
Receiver thread length l <sub>t</sub> [mm]	30

## Accessories

This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets    See pages 1068 ... for mounting aids

### MH-UDB01

Mounting bracket for double sheet monitor

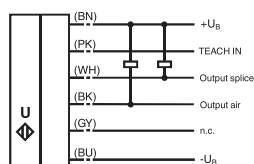


## Electrical Connection



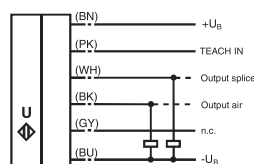
UGB-18GM50-255-2E1

Standard symbol/Connection:  
Splice control



UGB-18GM50-255-2E3

Standard symbol/Connection:  
Splice control





### Properties

- Short Ø18 mm housing
- Universal label detection
- Extraordinary fast response
- DC, 2 switching outputs
- Cable version

### Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

#### General Data

Sensing range	20 ... 60 mm , optimal distance: 45 mm
Transducer frequency	255 kHz
Operating voltage	18 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	< 60 mA
Rated operational current	2 x 100 mA , short-circuit/overload protected
Switch-on delay	≤ 600 μs
Switch-off delay	≤ 600 μs
Input type	TEACH-IN input
LED green	Display: readiness
LED yellow	indication: label detected
LED red	Display: error
Ambient temperature	0 ... 60 °C (32 ... 140 °F)
<b>Material</b>	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Protection degree	IP67
Connection type	cable PVC , 2 m



#### Model Number

Output type	2 switch outputs NPN, NC	ULB-18GM50-255-2E3	ULB-18GM50-255-2E1
	2 switch outputs PNP, NC	●	●

#### Approvals and Certificates

UL approval	C-UL listed: 57M3, IND CONT. EQ., "Powered by Class 2 Power Source"	●	●
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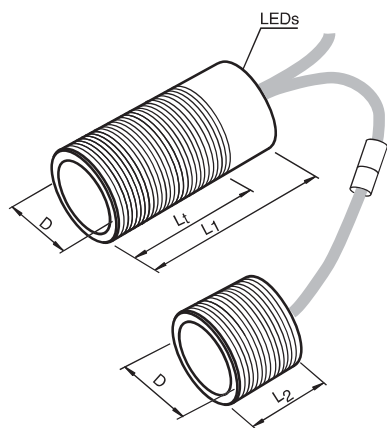
#### Dimensions

Receiver length L1 [mm]	53
Emitter length L2 [mm]	22
Diameter D [mm]	18
Receiver thread length l <sub>t</sub> [mm]	30

### Accessories

This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets      See pages 1068 ... for mounting aids

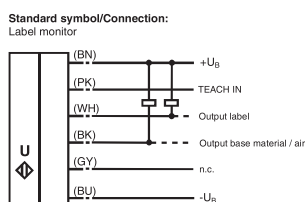
MH-UDB01	Mounting bracket for double sheet monitor
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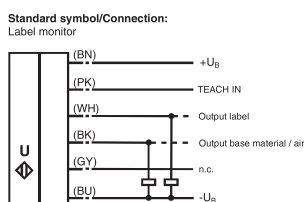
### Electrical Connection



ULB-18GM50-255-2E1



ULB-18GM50-255-2E3



Date of issue 2015-04-08





### Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

<b>Model Number</b>	<b>UDC-30GM-085-3E3</b>
Sensing range	50 ... 150 mm , optimal distance: 80 mm
Transducer frequency	85 kHz
Operating voltage	18 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	< 200 mA
Output type	3 switch outputs PNP, NC
Rated operational current	3 x 100 mA , short-circuit/overload protected
Switch-on delay	approx. 30 ms
Switch-off delay	approx. 30 ms
Pulse extension	min. 120 ms programmable
Input type	Function input
LED green	Display: single-layer material detected
LED yellow	Display: no material (air)
LED red	Display: 2-layer or multi-layer material detected
Ambient temperature	0 ... 50 °C (32 ... 122 °F)
<b>Material</b>	
Housing	nickel plated brass; plastic components: PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Protection degree	IP65
Connection type	cable PVC , 2 m



### Properties

- Ø30 mm housing
- Powerful material detection
- Fast response
- DC, 3 switching outputs
- Cable version

### Your Benefit

- Short-barrel design
- Maximum possible material burn-through power
- Excellent for thick plastics and cardboard
- One sensor identifies zero-, single- and double-sheets

### Approvals and Certificates

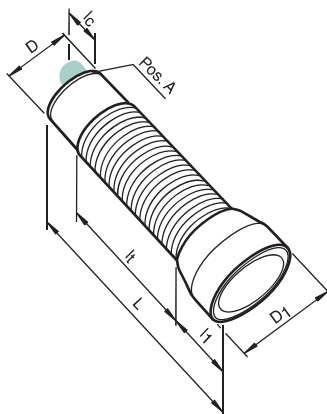
UL approval	cULus Listed, General Purpose, Class 2 Power Source
CSA approval	cCSAus Listed, General Purpose, Class 2 Power Source

### Dimensions

Length L [mm]	88 / 52
Diameter D [mm]	30
Transducer diameter D <sub>1</sub> [mm]	40
Transducer length l <sub>1</sub> [mm]	25
Thread length l <sub>t</sub> [mm]	41 / 27
Connector area l <sub>c</sub> [mm]	0
LED position	Pos. C

### Accessories This and more accessories can be found in chapter 3.5 from page 673 See pages from 972 ... for cordsets      See pages 1068 ... for mounting aids

<b>MH-UDB02</b>	Mounting bracket for double sheet metal monitor
<b>UDB-Cable-2M</b>	Extension cable
<b>UDB-Cable-1M</b>	Extension cable



### Electrical Connection



UDC-30GM-085-3E3

Standard symbol/Connection:  
Double sheet control

