

Discontinuation Notice of Digital Amplifier Ultrasonic Sensor Model E4C-UDA series.

Product Discontinuation

Digital Amplifier Ultrasonic Sensor



Model E4C-DS series

Model E4C-UDA series



Recommended Replacement

There is no Recommended Replacement for our company.

Pepperl+Fuchs SE

Model UB series

No recommended replacement

[Final order entry date]

The end of March, 2023

[Date of The Last Shipping]

The end of June, 2023

[Caution on recommended replacement]

There is no control output (ON / OFF output), and it becomes an analog output (4 to 20 mA).
If control output (ON / OFF output) is required, connect a digital panel meter, etc. to use it.

[Difference from discontinued product]

Recommended replacement Model	Body Color	Dimensions	Wire connection	Mounting Dimensions	Characteristics	Operation ratings	Operation methods
Model UB series	*	*	--	*	--	*	--

** : Compatible

* : The change is a little/Almost compatible

-- : Not compatible

- : No corresponding specification

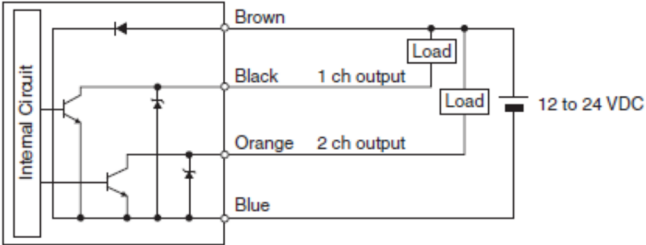
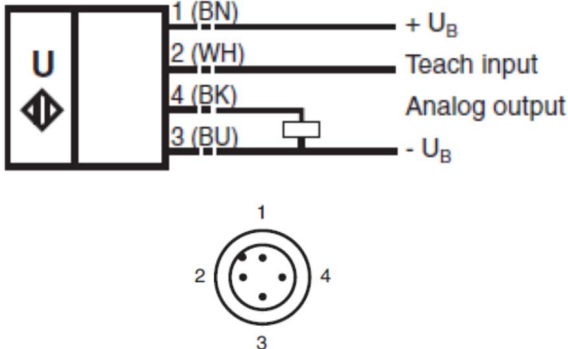
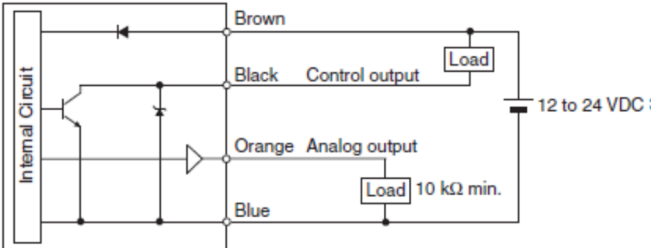
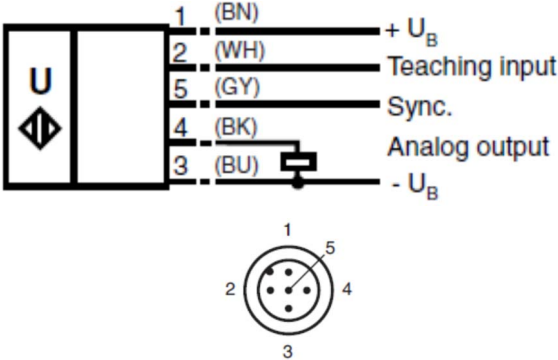
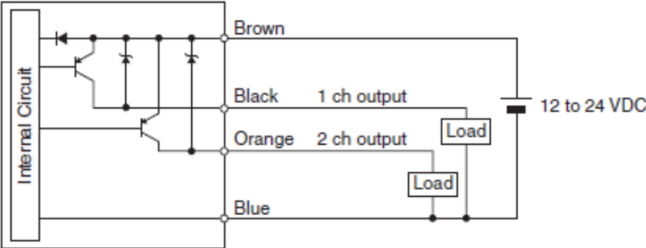
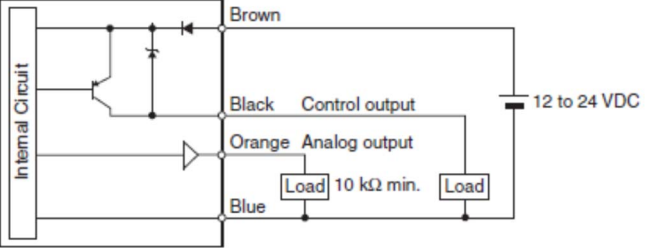
[Product Discontinuation and recommended replacement]

Product discontinuation	Recommended replacement
E4C-UDA41AN	No recommended replacement
E4C-UDA41	No recommended replacement
E4C-UDA11AN	No recommended replacement
E4C-UDA11	No recommended replacement
E4C-DS80L	UB800-18GM40A-I-V1 +V1-G-2M-PVC
E4C-DS80	UB800-18GM40-I-V1 +V1-G-2M-PVC
E4C-DS30L	UB300-18GM40A-I-V1 +V1-G-2M-PVC
E4C-DS30	UB300-18GM40-I-V1 +V1-G-2M-PVC
E4C-DS100	UB1000-18GM75-I-V15 +V15-G-2M-PVC

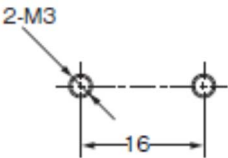
[Body color]

Product discontinuation Model E4C-UDA series	Recommendable replacement Model UB series
Sensor Heads Model E4C-DS□□  Black	Sensor Heads Model UB□□-18GM□□  Green

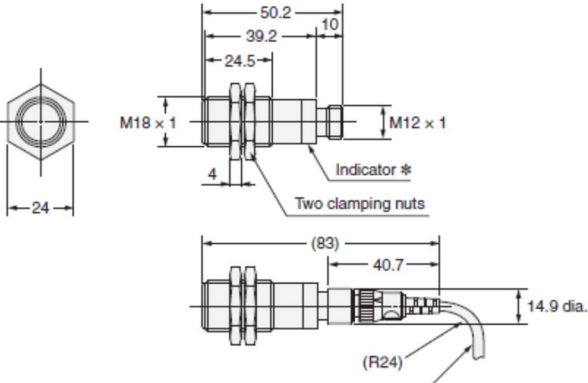
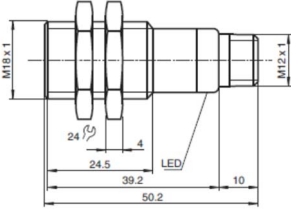
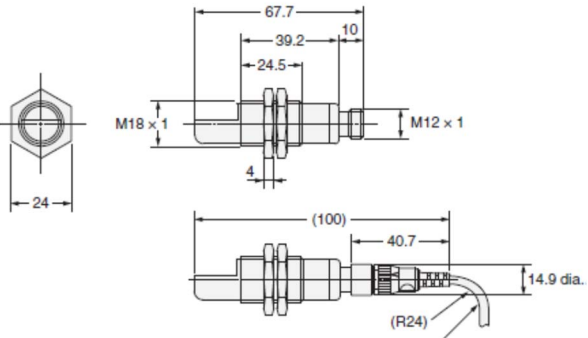
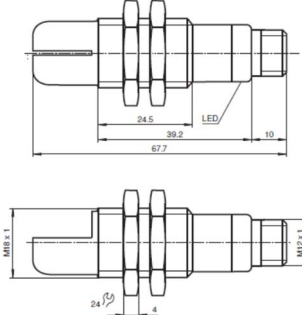
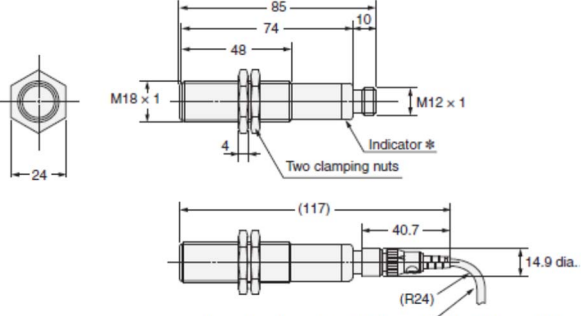
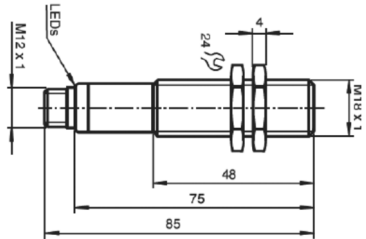
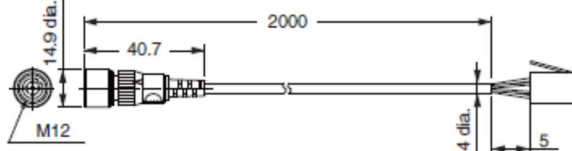
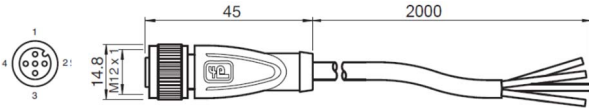
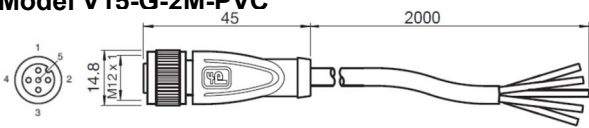
[Wire connection]

Product discontinuation Model E4C-UDA series	Recommendable replacement Model UB series
Sensor Heads Model E4C-DS30/DS30L/DS80/DS80L/DS1000 Model E4C-UDA11(NPN) 	NPN output Model UB300-18GM40-I-V1 Model UB300-18GM40A-I-V1 Model UB800-18GM40-I-V1 Model UB800-18GM40A-I-V1 
Model E4C-UDA11AN(NPN) 	Model UB1000-18GM75-I-V15 
Model E4C-UDA41(PNP) 	
Model E4C-UDA41AN(PNP) 	

[Mounting dimensions]

Product discontinuation Model E4C-UDA series	Recommendable replacement Model UB series
Amplifiers Model E4C-UDA□□□□ 	

[Dimensions]

Product discontinuation Model E4C-UDA series	Recommendable replacement Model UB series
Sensor Heads Model E4C-DS30/ DS80  4-mm diameter vinyl-insulated round cable with 4 conductors (cross-sectional of conductors: 0.2 mm², insulation system: 1.1-mm diameter), Standard length: 2 m	Model UB300-18GM40-I-V1/UB800-18GM40-I-V1 
Model E4C-DS30L/ DS80L  4-mm diameter vinyl-insulated round cable with 4 conductors (cross-sectional of conductors: 0.2 mm², insulation system: 1.1-mm diameter), Standard length: 2 m	Model UB300-18GM40A-I-V1/UB800-18GM40A-I-V1 
Model E4C-DS100  4-mm diameter vinyl-insulated round cable with 4 conductors (cross-sectional of conductors: 0.2 mm², insulation system: 1.1-mm diameter), Standard length: 2 m	Model UB1000-18GM75-I-V15 
Sensor-Amplifier connection cable 	Connection cable Model V1-G-2M-PVC  Model V15-G-2M-PVC 

[Dimensions]

Product discontinuation Model E4C-UDA series	Recommendable replacement Model UB series
Amplifiers Model E4C-UDA11 Model E4C-UDA41 4-mm diameter vinyl-insulated round cable with 4 conductors (cross-sectional of conductors: 0.2 mm², insulation system: 1.1-mm diameter), Standard length: 2 m	
Model E4C-UDA11AN Model E4C-UDA41AN 4-mm diameter vinyl-insulated round cable with 4 conductors (cross-sectional of conductors: 0.2 mm², insulation system: 1.1-mm diameter), Standard length: 2 m	

[Characteristics] Sensor Heads

Item		Model	Product discontinuation Model E4C-DS series			Recommendable replacement Model UB series		
			E4C-DS30 E4C-DS30L	E4C-DS80 E4C-DS80L	E4C-DS100	UB300- 18GM40-I-V1 UB300- 18GM40A-I-V1	UB800- 18GM40-I-V1 UB800- 18GM40A-I-V1	UB1000-18GM75-I- V15
Measurement range			60 to 275 mm	85 to 735 mm	110 to 910 mm	50 to 300 mm	70 to 800 mm	90 to 1000 mm
Standard sensing object			100×100 mm SUS flat plate					
Near distance dead band			0 to 50 mm	0 to 70 mm	0 to 90 mm	0 to 35 mm	0 to 50 mm	0 to 70 mm
Ultrasonic oscillation frequency			Approx. 390 kHz	Approx. 255kHz		Approx. 390kHz	Approx. 255 kHz	
Response speed			30 ms	100 ms	125 ms	50 ms	100 ms	125 ms
Indicator			(Yellow) Lit: Sensor within sensing range (Green) Lit: Power indicator		(Yellow) Lit: Sensor within sensing range	(Green) Power on (Yellow) solid yellow: object in the evaluation range yellow, flashing: program function, object detected (Red) solid red: Error red, flashing: program function, object not detected		(Yellow) solid yellow: object in the evaluation range yellow, flashing: program function, object detected (Red) solid red: Error red, flashing: program function, object not detected
Operating voltage			—	—	—	10 to 30 V DC, ripple 10%SS		
No-load supply current			—	—	—	≤ 20 mA		≤ 45 mA
Input/ Output	Type	—	—	—	—		1 synchronous connection, bi-directional	
	voltage	—	—	—	—		0-level: -UB...+1 V 1-level: +4 V...+UB	
	Impedance	—	—	—	—		> 12 kΩ	
	Pulse	—	—	—	—		synchronization pulse: ≥ 100 μs, synchronization interpulse period: ≥ 2 ms	
Input	Type	—	—	—	1 program input			
	voltage	—	—	—	lower evaluation limit A1: -UB ... +1 V, upper evaluation limit A2: +4 V ... +UB			
	Impedance	—	—	—	> 4.7 kΩ			
	Pulse	—	—	—	pulse duration: ≥ 1 s			
Output	Type	—	—	—	1 analog output 4 ... 20 mA, short-circuit/overload protected			
	Resolution	—	—	—	0.4 mm at max. sensing range	0.4 mm at max. sensing range	0.35 mm	
	Deviation of the characteristic curve	—	—	—	±1% of full-scale value			
	Repeat accuracy	—	—	—	±0.5% of full-scale value		±0.1% % of full-scale value	
	Load impedance	—	—	—	0 to 300 Ohm			
	Temperature influence	—	—	—	±1.5 % of full-scale value			
Ambient temperature range			Operating: -25 to +70°C, Storage: -40 to +85°C (with no icing or condensation)					
Enclosure rating			IP65			IP67		IP65
Weight			Approx. 150 g		Approx. 170 g	25 g		60 g
Materials			Case: Nickel-plated brass, Oscillator surface: Glass epoxy resin and polyurethane					

[Characteristics]

Amplifiers

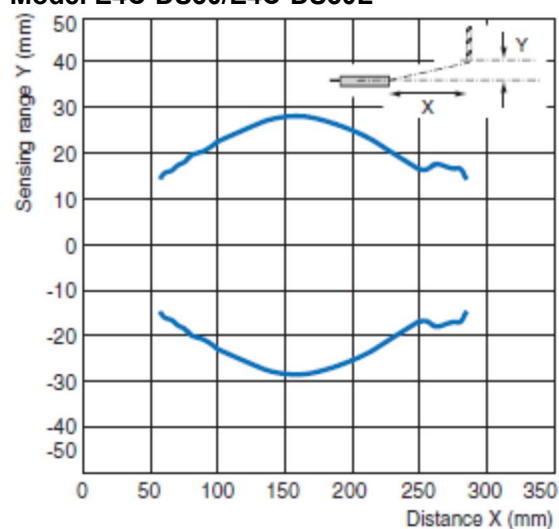
Item		Model Type	Product discontinuation Model E4C-UDA series			
			E4C-UDA11	E4C-UDA41	E4C-UDA11AN	E4C-UDA41AN
			Twin Output Models		Analog Output Models	
Output configuration		NPN output	NPN output	NPN output	NPN output	
Connection method		Pre-wired				
Supply voltage		12 to 24 VDC $\pm 10\%$, ripple 10% max.				
Current consumption		80 mA max.				
Control output		NPN open collector (26.4 VDC max.), Load current: 50 mA max., Residual voltage: 1 V max.				
Timer		OFF/OFF-delay/ON-delay/one-shot				
Timer time		1 ms to 5 s				
Analog output	Connected load	—		Voltage output (1 to 5 VDC)		
	Output form	—		10 k Ω min.		
	Resolution	—		1.0% F.S.		
	Emperature characteristics	—		0.3%F.S./°C		
	Repeat accuracy	—		2.0% F.S.		
	Linearity	—		Within $\pm 2\%$ F.S.		
Protective circuit		Power supply reverse polarity protection, output short-circuit protection				
Ambient temperature range		Operating: -25 to $+55^{\circ}\text{C}$, Storage: -30 to $+70^{\circ}\text{C}$ (with no icing or condensation)				
Ambient humidity range		Operating and storage: 35% to 85% (with no condensation)				
Insulation resistance		20 M Ω min. (at 500 VDC)				
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min				
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude, 2 hours each in X, Y, and Z directions				
Shock resistance		500 m/s ² , 3 times each in X, Y and Z directions				
Enclosure rating		IP50				
Materials		Case: PBT (polybutylene terephthalate), Cover: Polycarbonate				
Weight (packed state)		Approx. 100 g				
Accessories		Instruction Manual				

[Operation ratings]

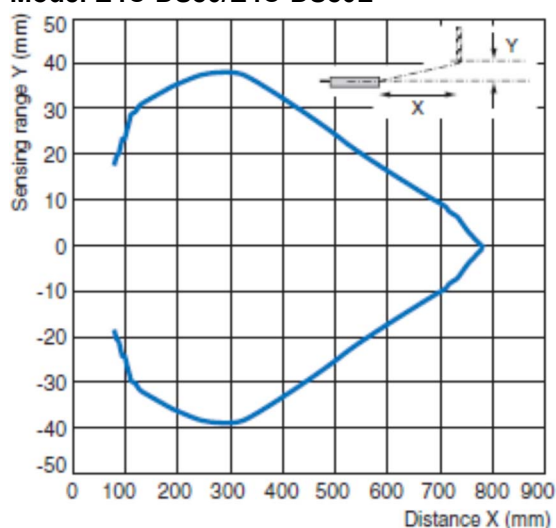
**Product discontinuation
Model E4C-UDA series**

Operating Range

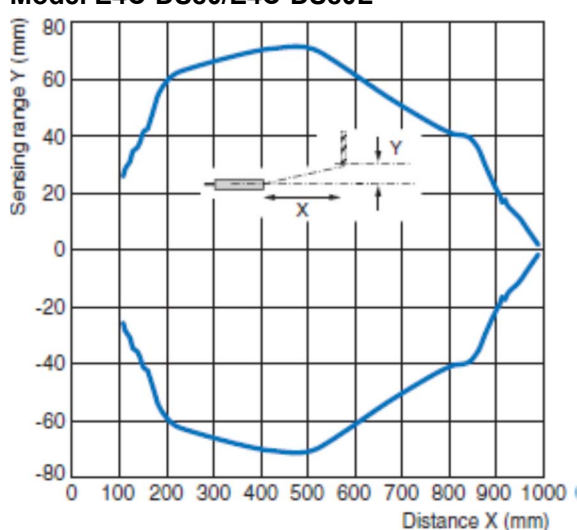
Model E4C-DS30/E4C-DS30L



Model E4C-DS80/E4C-DS80L

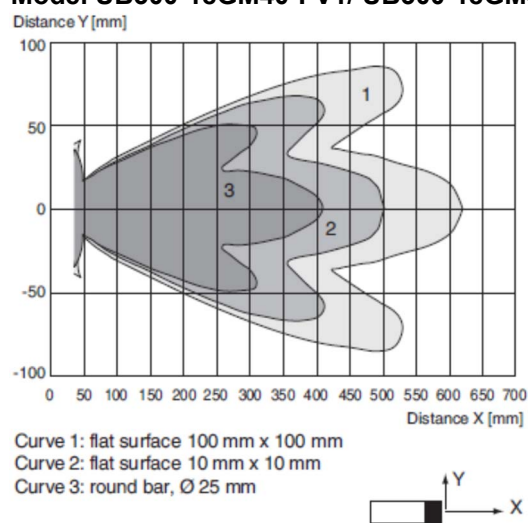


Model E4C-DS80/E4C-DS80L

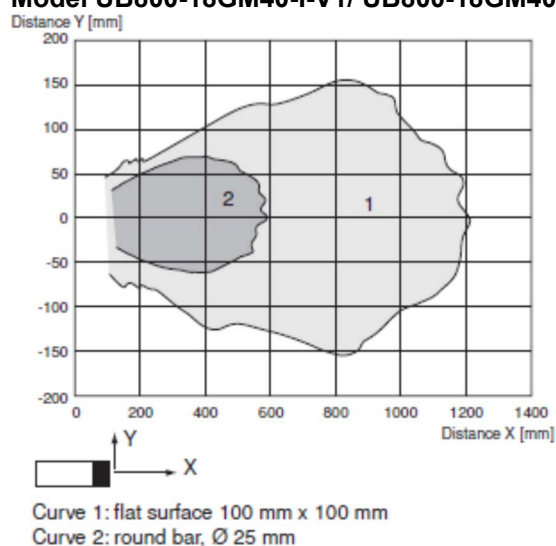


**Recommendable replacement
Model UB series**

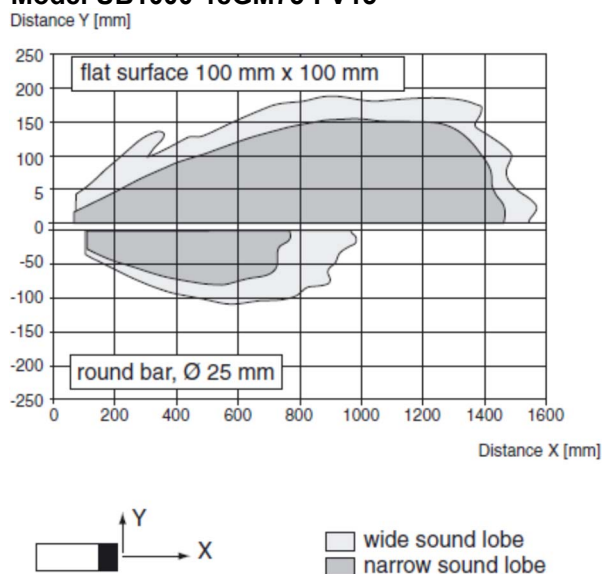
Model UB300-18GM40-I-V1/ UB300-18GM40A-I-V1



Model UB800-18GM40-I-V1/ UB800-18GM40A-I-V1



Model UB1000-18GM75-I-V15

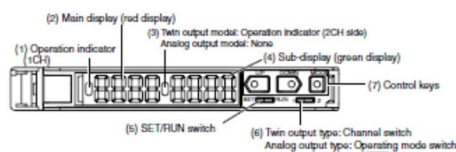


[Operation methods]

Product discontinuation Model E3C-LD/LR/LDA series

Recommendable replacement Model E3C-LD[N]/LR[N]/LDA[N] series

1. Part Names and Functions



- (1) This indicator lights when the output turns ON.
In the case of the twin output model, this indicator lights when the output of 1CH turns ON.
- (2) This display shows the distance to the workpiece and function name.
- (3) In the case of the twin output model, this indicator lights when the output of 2CH turns ON.
- (4) This sub-display shows additional information and function settings for sensing.
- (5) This switch selects the operating mode.
- (6) In the case of the twin output model, this switch selects the channel to be displayed and set.
In the case of the analog output model, this switch selects whether to turn output ON when the workpiece is in the near distance or the workpiece is in the far distance.
- (7) These keys switch the display and set functions.

2. List of Functions

Function Name	Overview	Page for Description of Operation
Operating mode setting	This function sets the operating mode.	P.7
Threshold setting	This function sets the threshold values.	P.8
Bank setting/cal	This function saves and reads settings.	P.10
Scaling setting	This function changes the display values for specific measurement values to the desired values. (twin output model only)	P.11
Judgment output setting	This function selects the output method.	P.12
Analog output range setting	This function sets the range and display ratio of the analog output with respect to the display value. (analog output model only)	P.13
Zero reset/offset	This function sets the current distance to 0 (zero) or to any value.	P.15, P.16
Display inversion	This function inverts how the display for the distance to the workpiece is incremented/decremented.	P.15
Keylock	This function disables key operation.	P.16
Initialization	This function returns the amplifier settings to their factory settings.	P.16

Adjusting the evaluation limits

The ultrasonic sensor features an analogue output with two teachable evaluation limits. These are set by applying the supply voltage $-U_B$ or $+U_B$ to the TEACH-IN input. The supply voltage must be applied to the TEACH-IN input for at least 1 s. LEDs indicate whether the sensor has recognised the target during the TEACH-IN procedure. The lower evaluation limit A1 is taught with $-U_B$, A2 with $+U_B$.

Two different output functions can be set:

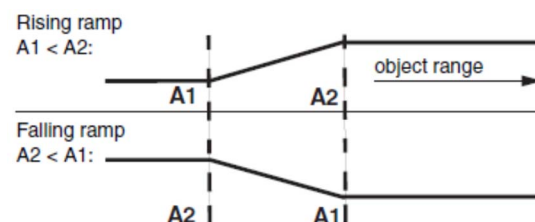
1. Analogue value increases with rising distance to object (rising ramp)
2. Analogue value falls with rising distance to object (falling ramp)

TEACH-IN rising ramp ($A2 > A1$)

- Position object at lower evaluation limit
- TEACH-IN lower limit A1 with $-U_B$
- Position object at upper evaluation limit
- TEACH-IN upper limit A2 with $+U_B$

TEACH-IN falling ramp ($A1 > A2$):

- Position object at lower evaluation limit
- TEACH-IN lower limit A2 with $+U_B$
- Position object at upper evaluation limit
- TEACH-IN upper limit A1 with $-U_B$



Specifications and prices in this product news are as of the issue date and are subject to change without notice. Only main changes in specifications are described in this document. Please be sure to read the relevant catalogs, datasheets, product specifications, instructions, and manuals for precautions and necessary information when using products.