



# **Operating Manual US00A...US07A**

Analog ultrasonic edge detection sensors for web guiding

Version 2.03 04/02 fg

This operation manual is also available in german, french and italian.  
Please contact your local representative.

Diese Bedienungsanleitung ist auch in deutsch, französisch und italienisch erhältlich.  
Bitte kontaktieren Sie die Vertretung im zuständigen Land.

Ce mode d'emploi est également disponible en français, en italien et en allemand.  
Veuillez contacter la représentation locale.

Questo manuale d'installazione è disponibile anche in lingua italiano, francese e tedesco.  
Vogliate cortesemente contattare la locale rappresentanza.

# 1 Functional description

The ultrasonic sensors US00A...US07A are suitable for the detection of all materials with the exception of sound transmissive ones (e.g. no open weave textiles). They are factory set, so that no adjustments are necessary. The main advantage of the US series is the detection of transparent films. This allows easy operation with frequently changing, differing opacity materials.

The US07A can be mounted between the unwind reel and the process as a wide gap sensor thereby eliminating the need for a steady roller.

# 2 Dimensions

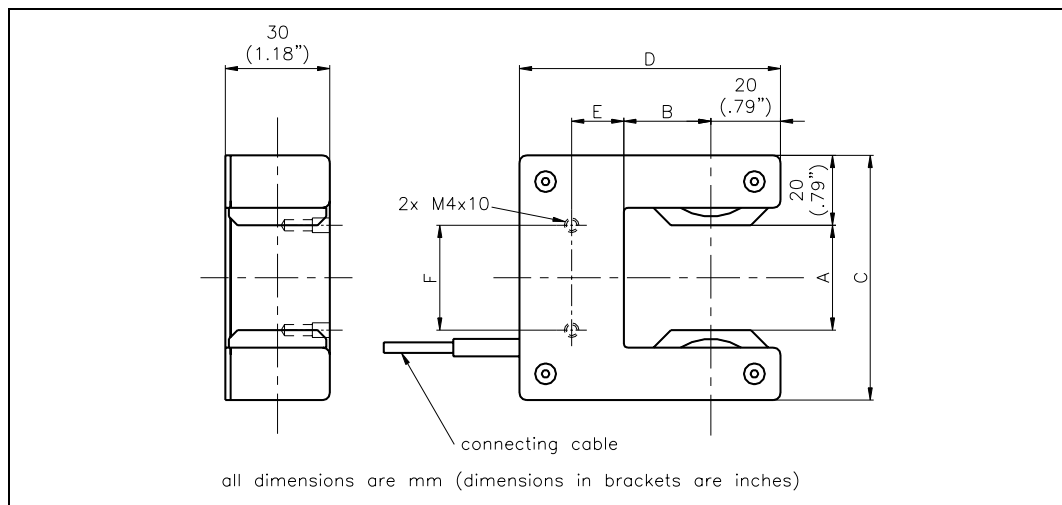


fig. 1

K100205e

Sensor	US00A	US01A	US02A	US03A	US04A	US07A
Throat width (dim. A)	20	30	30	70	90	180
Throat depth (dim. B)	20	25	80	80	80	50
Sensor height (dim. C)	60	70	70	110	130	220
Sensor length (dim. D)	65	75	130	130	130	100
Dim. E	7.5	15	15	15	15	15
Dim. F	30	30	30	30	30	90

# 3 Technical data

Measuring width	10mm
Resolution	0.2mm
Measuring rate	1ms
Output signal 0...10V	0V when the web fully covers the sensor (10mm) 10V when the web doesn't cover the sensor (0mm)
Power supply	24VDC (19...26VDC)
Connecting cable	3x0.14mm <sup>2</sup> , length 5m or 10m
Temperature range	0 .. 45°C
Protection class	IP 20

# 4 Installation

## 4.1 Mounting the sensor

The sensor will be mounted by 2 threads M4 to a bracket. The bracket will be fixed to the location rail (by using manual sensor adjustment) or to the flange of the linear unit (by using motorized sensor adjustment).

The bracket varies depending on system configuration (steering frame size, manual or motorized sensor adjustment, etc.). It must be ordered separately (refer to order list below).

For more information see operating manual of the web guide controller.

Bracket for	Ordering Code
Steering frame FMS-webMASTER 020	BKS.W.V.A
manual sensor adjustment for steering frame FMS-webMASTER 030/040	BKS.W.V.A
Motorized sensor adjustment	BKS.W.T.A

## 4.2 Wiring

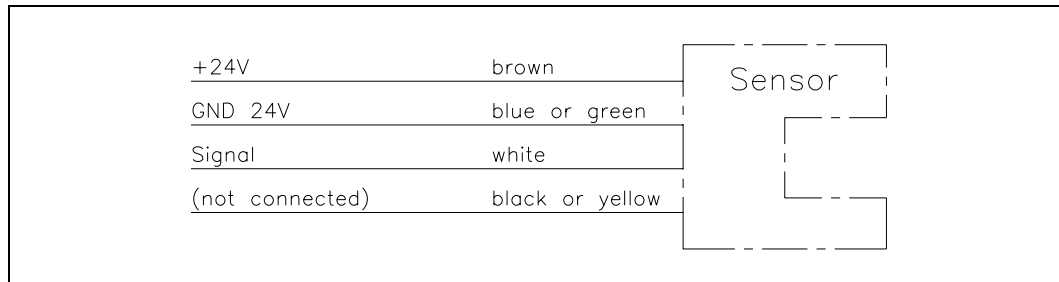


fig. 2: Connections

K100102e

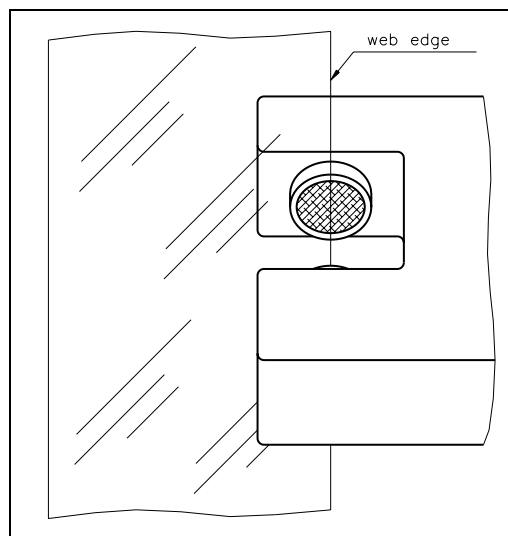
If the sensor is used with the web guide controller BKS100 and the steering frame FMS-webMASTER 020, the sensor is full wired with 300mm wire 4x0.14mm<sup>2</sup> and a screw-in plug M8x1. The plug will be fixed directly to the socket on the housing of the BKS100.

If the sensor is used with another steering frame or with another web guide controller it is equipped with wire 3x0.14mm<sup>2</sup>. The length is 5m or 10m (give specification when ordering). The connection has to be done refer to fig. 2.

## 5 Operating

### Sensor adjustment

- Align sensor axis to the web edge. The sensor will be positioned properly if the web edge goes through the sensor axis (center of active window; refer to fig. 3).
- No additional adjustments are needed. The sensor is ready to operation.



**fig. 3: Aligning of the sensor axis to the web edge** K100004e

## 6 Trouble shooting

Operation without web guide controller is not possible. Therefore trouble shooting is written in the operation manual of the web guide controller.



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