

# Rewinding & Unwinding Web Guiding System

Automatic edge guiding for unwind and rewind stations

## TF100-S

**WFC02** touch-screen controller + **WU2000-100** brushless servo actuator + **EDS-02** ultrasonic sensor + **SF-WT25** adjusting bracket



TF100-S system composition

### Overview

The system controls web edge position at the unwind and rewind stations. The sensor detects the edge deviation in real time; the controller outputs a proportional signal to the brushless servo actuator, which shifts the roll shaft laterally to correct the web — a closed loop of detection, analysis and execution.

### Key features

- Control accuracy 0.1 mm, response time 2 ms
- Colour touch screen: deviation, position, current, temperature
- RS485 (Modbus-RTU) and 6-channel programmable I/O
- Actuator travel 50 / 100 / 150 / 200 / 260 mm
- Ultrasonic or infrared edge sensor for transparent and opaque webs
- Brushless servo actuator, 2500 N thrust, electronic brake and position feedback

### Ordering model index

## T F 100 - S

| Position   | Designation                  | Available codes                                                                                                        |
|------------|------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>T</b>   | Controller type              | <b>T</b> = WFC02 touch-screen controller   <b>Y</b> = WGC02 LCD controller   <b>C</b> = WGC01 colour-screen controller |
| <b>F</b>   | Rewinding & unwinding series | Fixed code                                                                                                             |
| <b>100</b> | Actuator travel              | <b>50</b>   <b>100</b>   <b>150</b>   <b>200</b>   <b>260</b>                                                          |
| <b>S</b>   | Sensor type                  | <b>S</b> = ultrasonic sensor   <b>R</b> = infrared sensor   <b>C</b> = CCD sensor                                      |

## 1. Controller — WFC02 touch-screen controller



WFC02 touch-screen controller

|                       |                                |
|-----------------------|--------------------------------|
| <b>Outline</b>        | 136 × 90 × 41.5 mm             |
| <b>Panel cut-out</b>  | 131.5 × 85.5 mm                |
| <b>Mounting depth</b> | 36.5 mm (panel thickness 8 mm) |
| <b>Mounting</b>       | Panel-mount with clamp         |

| Technical parameters         |                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------|
| <b>Processor</b>             | 32-bit high-performance MCU, up to 240 MHz                                          |
| <b>Sensor interface</b>      | Dual digital inputs                                                                 |
| <b>Actuator interface</b>    | Brushless DC actuator, max. drive power 360 W                                       |
| <b>I/O interface</b>         | 6-channel programmable remote-control digital I/O                                   |
| <b>Communication</b>         | RS485 (Modbus-RTU), for remote control                                              |
| <b>Working environment</b>   | 0 ~ 50 °C; humidity 5 ~ 90 %, non-condensing                                        |
| <b>Power supply</b>          | 24 ~ 36 VDC                                                                         |
| <b>Protection</b>            | Over-current, over-voltage, overload, short-circuit and reverse-polarity protection |
| <b>Alarm &amp; diagnosis</b> | Limit alarm, fault alarm, self-diagnosis                                            |
| <b>Display</b>               | High-resolution colour touch-screen display                                         |

### Performance and features

- Response time 2 ms, high accuracy
- System control accuracy 0.1 mm
- Drives the full range of EURDOW actuators
- Works with all EURDOW sensors: edge guiding, dual-sensor centre guiding, line guiding
- High-resolution colour touch screen shows the full system status
- Real-time display of web deviation, actuator position, current and temperature
- System parameters can be changed online while running
- Oscillating guiding, multi-layer guiding, material fault tolerance, etc.

## 2. Edge-tracking sensor



EDS-02 ultrasonic sensor



EDR-02 infrared sensor

| Coil material type   | EDS-02<br>Ultrasonic | EDR-02<br>Infrared |
|----------------------|----------------------|--------------------|
| Transparent material | ◆                    |                    |
| Opaque material      | ◆                    | ◆                  |
| Foil                 | ◆                    | ◆                  |
| Paper                | ◆                    | ◆                  |
| Metal sheet          | ◆                    | ◆                  |
| Non-woven fabric     |                      | ◆                  |
| Textile              |                      | ◆                  |
| Mesh fabric          |                      | ◆                  |
| Clothing material    |                      | ◆                  |

### Technical parameters (EDS-02 / EDR-02)

|                         |                                                          |
|-------------------------|----------------------------------------------------------|
| Detection accuracy      | 0.01 mm                                                  |
| Detection range         | 7 mm                                                     |
| Response time           | 2 ms                                                     |
| Anti-light interference | (infrared) sunlight 10000 Lux, fluorescent lamp 3000 Lux |
| Opening size            | 40 mm (customizable)                                     |
| Input                   | 24 V                                                     |
| Output                  | Digital, direct to controller                            |
| Outline                 | 83 × 80 × 30 mm, slot depth 20.5 mm                      |
| Mounting                | 2-M4 holes (16 mm pitch) / M8×0.5 fine thread            |

TF100-S is supplied with the EDS-02 ultrasonic sensor; order TF100-R for the EDR-02 infrared sensor.

### Performance and features

- The edges of various materials can be tracked
- High-precision detection and fast response
- Strong anti-interference design
- Different opening sizes and detection ranges can be customized

## 3. Sensor mounting bracket — SF-WT25 fine-adjustment bracket


 SF-WT25 adjusting bracket  
 for EDS-02 / EDR-02 sensors

### Technical parameters

|                        |                                           |
|------------------------|-------------------------------------------|
| Function               | Sensor mounting and fine adjustment       |
| Outline                | 103 × 86 × 41 mm                          |
| Fine-adjustment travel | 15 mm, knob-locked                        |
| Angular adjustment     | 360° adjustable, lockable in any position |
| Mounting holes         | Ø8.5 slotted holes, 65.8 mm pitch         |
| Clamping bar           | Ø25 mm                                    |

## 4. Actuator — WU2000 series



WU2000-100 brushless servo actuator

### Performance and features

- Brushless DC motor, fast response, long service life
- Built-in electronic brake for precise positioning
- Built-in position feedback, real-time travel display
- Limit and centre positions are parameter-settable
- Real-time display of module temperature and motor current

### Technical parameters

|              |                                            |
|--------------|--------------------------------------------|
| Motor type   | Brushless DC servo                         |
| Rated thrust | 2500 N                                     |
| Travel       | ± 50 mm (total travel 100 mm)              |
| Speed        | 38 mm/s                                    |
| Size A / B   | A = 266 mm / B = 410 mm                    |
| Power supply | Driven by the WFC02 controller, max. 360 W |
| Connection   | Rod ends Ø12H7 / base 85 × 52              |

| Model             | Rated thrust | Travel | Speed | Size A | Size B | System model   |
|-------------------|--------------|--------|-------|--------|--------|----------------|
| WU2000-50         | 2500         | ± 25   | 38    | 216    | 360    | TF50-S         |
| <b>WU2000-100</b> | 2500         | ± 50   | 38    | 266    | 410    | <b>TF100-S</b> |
| WU2000-150        | 2500         | ± 75   | 38    | 316    | 460    | TF150-S        |
| WU2000-200        | 2500         | ± 100  | 38    | 366    | 510    | TF200-S        |
| WU2000-260        | 2500         | ± 130  | 38    | 426    | 570    | TF260-S        |

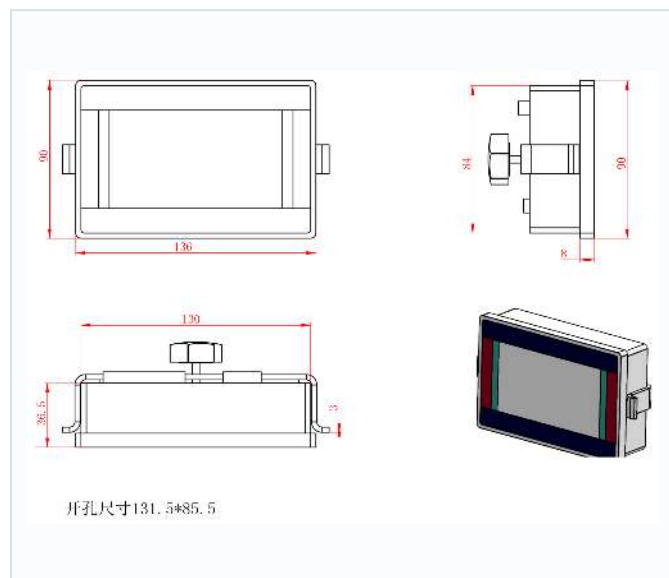
## 5. System configuration and packing

| System model   | Controller | Actuator   | Sensor | Bracket | Packing size    | Gross weight |
|----------------|------------|------------|--------|---------|-----------------|--------------|
| TF50-S         | WFC02      | WU2000-50  | EDS-02 | SF-WT25 | 690 × 440 × 225 | 8.0          |
| <b>TF100-S</b> | WFC02      | WU2000-100 | EDS-02 | SF-WT25 | 690 × 440 × 225 | 9.6          |
| TF150-S        | WFC02      | WU2000-150 | EDS-02 | SF-WT25 | 690 × 440 × 225 | 11.0         |
| TF200-S        | WFC02      | WU2000-200 | EDS-02 | SF-WT25 | 690 × 440 × 225 | 13.0         |
| TF260-S        | WFC02      | WU2000-260 | EDS-02 | SF-WT25 | 690 × 440 × 225 | 14.5         |

Standard scope of supply: controller, actuator, sensor, adjusting bracket, cables and operation manual. A 24 VDC switching power supply and remote I/O cables are optional. Packing weights are for reference.

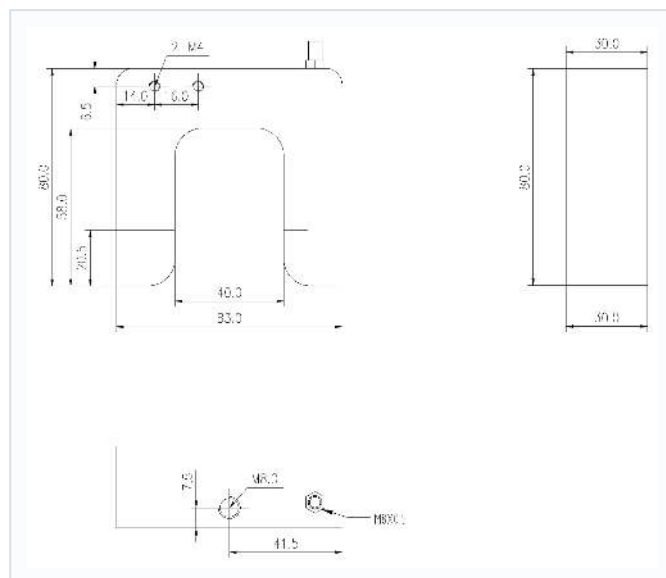
## 6. Dimension drawings • Unit: mm

### Touch-screen controller



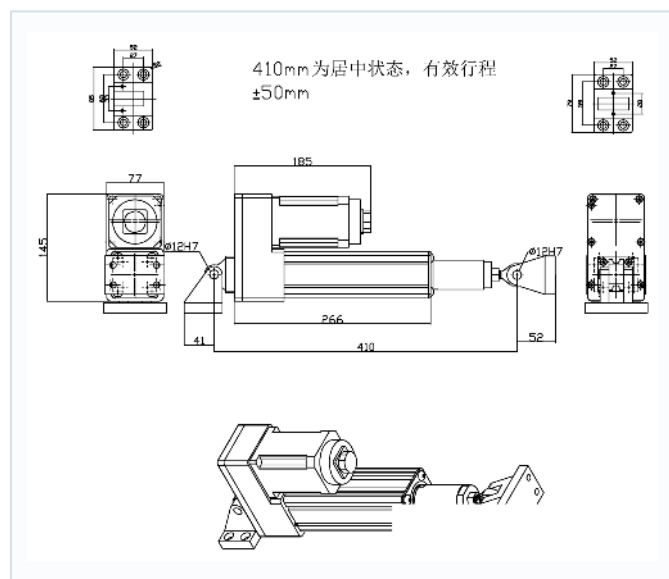
Panel cut-out 131.5 × 85.5

### Edge sensor



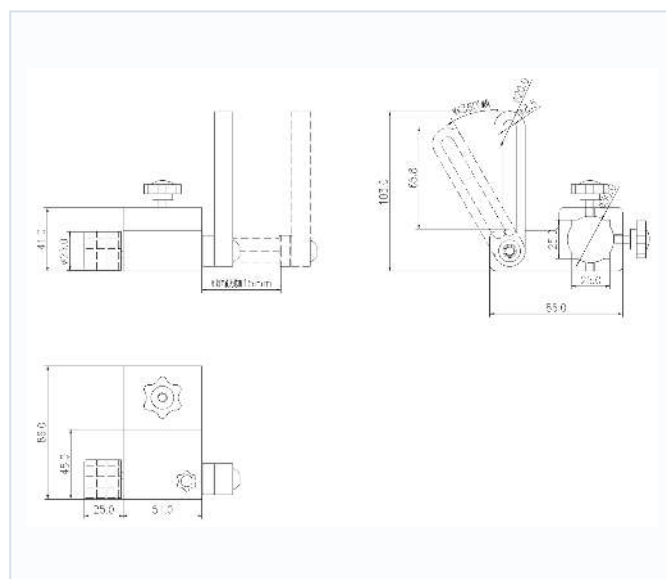
Opening 40 / 2-M4 + M8 × 0.5

### Actuator



410 mm at centre position, effective travel ±50 mm

### Adjusting bracket



Max. fine-adjustment range 15 mm

Actuators of other strokes (WU2000-50 / -150 / -200 / -260) share the same outline; only lengths A / B differ as listed in the actuator table.