Long-range Laser Distance Sensor

DDK-F100 / F200 / F500 / FM10 / FM20 / FM50



Distance measurement and setup

Phase-based measurement.
Fast distance measurement with selectable English / Chinese menus.

Set parameters on the sensor without a PC. Baud rate and station address can be selected; the sheet states networking of up to 255 units.

Use with a PLC or configuration software. Metal housing with IP67 protection.

On-sensor operation



M: menu / teach
SET: set / confirm
UP: increase / next option
DOWN: decrease / previous option

Press SET once with no target, then again with the target present to teach the switching output. Upper and lower limits can also be set.

Output and range options

Six measuring ranges, each with an NPN or PNP switching-output model. RS485 and analog current / voltage options are described in the source. Confirm the analog option on the ordered unit; the sheet does not establish simultaneous current and voltage output.

Target color is described as having little effect on detection. The source also warns that dark targets, strong sunlight and large ambient-temperature changes can increase error; validate the actual target and conditions.

Model selection and technical data

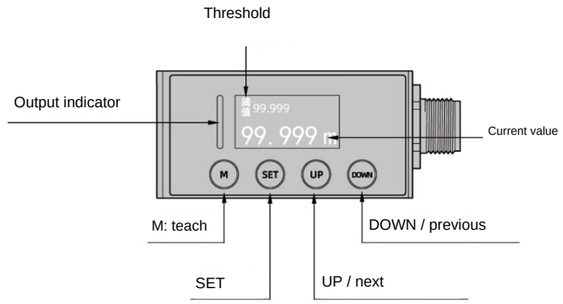
Range	NPN switching output	PNP switching output
0.1-1 m	DDK-F100NM-485	DDK-F100PM-485
0.1-2 m	DDK-F200NM-485	DDK-F200PM-485
0.1-5 m	DDK-F500NM-485	DDK-F500PM-485
0.1-10 m	DDK-FM10NM-485	DDK-FM10PM-485
0.1-20 m	DDK-FM20NM-485	DDK-FM20PM-485
0.1-50 m	DDK-FM50NM-485	DDK-FM50PM-485

Resolution	1 mm
Measurement error	+(2 mm + d × 0.0001), as printed; d = measured distance
Laser	Red semiconductor laser, Class II; 655 +10 nm as printed; <1 mW
Supply voltage	12-24 V DC; table: +10%; ripple P-P 10% (see note)
Current consumption	≤50 mA at 24 V
Control output	NPN or PNP switching output, according to model; max. 50 mA; applied voltage <30 V DC; residual voltage <1.5 V; leakage current <0.1 mA
Output action / protection	Normally open / normally closed selectable; self-recovering short-circuit protection
Analog voltage option	0-5 V (5.2 V at alarm); output impedance 100 Ω
Analog current option	4-20 mA (0 mA at alarm); output impedance: max. 300 Ω as stated
Response time	50-200 ms
External input	NPN non-contact input stated in table; see circuit note
Protection / material	IP67 / aluminum
Operating temperature	-10 to +45°C; no condensation or frost
Storage temperature	-20 to +60°C
Operating humidity	35-85% RH
Ambient illumination	Incandescent lamp: ≤3,000 lux at receiving surface
Altitude / cable / mass	≤2,000 m / 2 m, 8-core composite cable / approx. 150 g

Source notes: error and wavelength use a plus sign as printed; the tolerance notation needs confirmation. Use consistent units for d and error. Strong sunlight, large temperature changes or dark targets can increase error; a reflector may help. Supply tolerance is +10% in the table but ±10% in the circuits. Confirm the ordered unit.

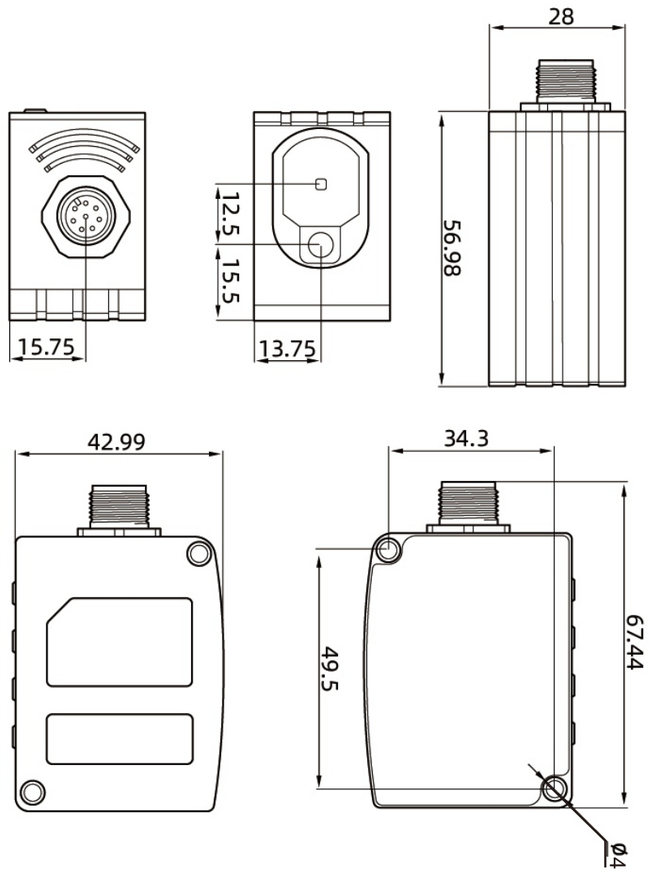
Panel and controls

Threshold setting and current measured distance are displayed on the screen. The green indicator shows the switching-output status. M is the menu / teach key; SET confirms settings; UP / DOWN change values or options.



Outline dimensions

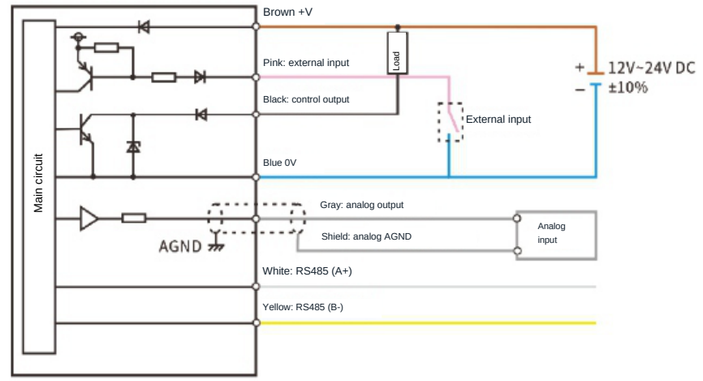
Original dimension drawing retained. Dimensions in mm; drawing proportions unchanged.



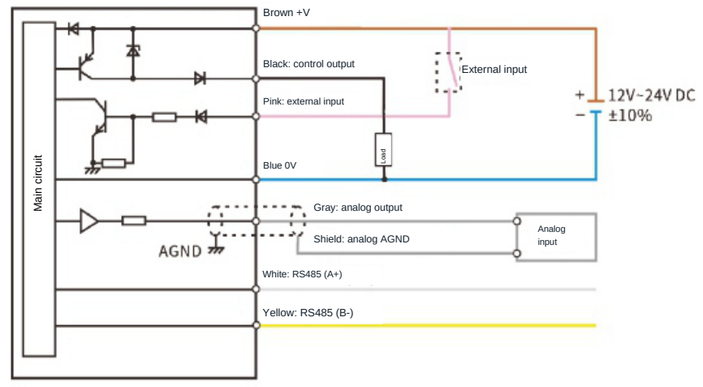
Output circuits

Use the circuit for the ordered NPN or PNP output version. Wire colors and circuit connections are retained from the supplied sheet; only labels are translated.

NPN + RS485 + analog output



PNP + RS485 + analog output



Connection reference

Brown	+V supply
Blue	0 V
Black	Switching control output (NPN / PNP model)
Pink	External input
Gray	Analog output
Shield	Analog ground (AGND)
White	RS485 A+
Yellow	RS485 B-

Circuit note: the source table states an NPN external input, while the PNP circuit shows a different external-input connection. Confirm the applicable supply tolerance and input wiring before connection; power off before wiring.