TL TECHLASER



TECHLASER

TL TECHLASER

For **12** years, we've built a reputation as a reliable OEM manufacturer of industrial pan-tilt systems

We engineer and produce custom electronic devices for industrial applications



In 2025, we are commissioning a **1,602.6**-sq.m. production site in Malaya Vishera

Our production facility is equipped with **13** modern milling machines and lathes





We annually

participate in major Russian and international exhibitions



TECHLASER

▲ TL.0329

PAN-TILT





Maximum axial payload capacity: 10 kg



All-weather heavy-duty metal housing



Flexible connection options for pan-tilt positioners and payloads (cable and connector solutions)



Vibration and shock resistance



Horizontal rotation speed: up to 47°/s



Easy connectivity: 5/12 VDC power supply, direct motor control. Ethernet or RS-485



Pan rotation: 290° 100° elevation angle



Device weight: 2 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS:

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

PAN-TILT POSITIONER



The most compact dual-axis pan tilt positioner with the best value proposition. The motorized platform is designed to rotate mounted equipment in both elevation and azimuth axes at specified speeds within defined angular limits



▲ TL.0329

TL.0329-120

Angular Range

vertical plane (elevation angle) horizontal plane (azimuth)

Angular Speed

vertical plane (elevation angle) horizontal plane (azimuth)

Maximum torque

vertical plane (elevation angle) horizontal plane (azimuth)

Maximum axial load

Device control method

Control interface

Pan-tilt positioner payload interface

Nominal supply voltage (and payload voltage)

Power consumption

IP rating

Weight

Overall dimensions

Operating temperature

TL.0329-110

Techlaser" protocol

Pelco-D

RS-485

(half-duplex)

1 × RS-485

-10 ... 90 °

0 ... 320°

Voltage 5V: 18 ° / 9.5 ° Voltage 12V: 47 ° / 25 °

> 7.8 kgf·cm 3,5 kgf·cm

> > 10 ka

'Techlaser" protocol Pelco-D Ethernet

10/100BASE-T/TX 1 × Ethernet

5 / 12 VDC

30 W

IP65 2.4 kg

125×131×139 mm

- 40...+ 50 °C



PAN-TILT POSITIONER A TL.0329

The compact pan-tilt positioner is designed to move mounted equipment within specified limits. It provides 290° horizontal rotation and 100° vertical tilt

DESIGNED AND ENGINEERED FOR:

Cost-sensitive system solutions Light payload positioning



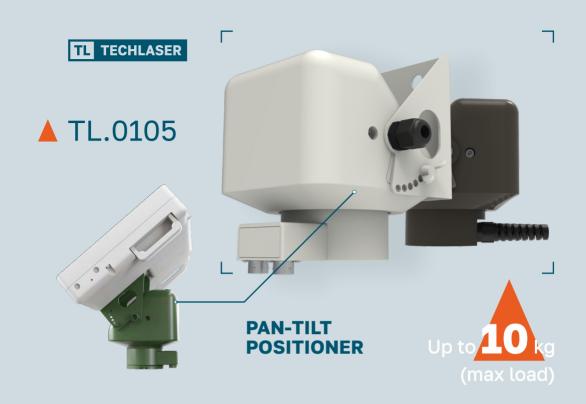
KEY DIFFERENCES FROM EXISTING SYSTEMS

Pan-tilt positioner is engineered with a focus on efficiency and cost reduction, making it one of the most affordable

solutions in its class

Convenient port placement for positioner and payload connectivity

Manufactured using high-strength alloys and adapted for harsh climatic conditions





Maximum axial payload capacity: 10 kg



All-weather heavy-duty metal housing for slewing rings



Flexible connection options for pan-tilt positioners and payloads (cable and connector solutions)



Slewing ring vibration and shock resistance



Horizontal rotation speed: up to 40°/s



Easy connectivity: 24VDC power. Ethernet



High positioning accuracy



360° continuous rotation with oscillating mode



Device weight: 3 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS;

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

PAN-TILT POSITIONER

▲ TL.0105

Agile pan-tilt platform designed to position mounted equipment within specified elevation limits at controlled speeds. Delivers wide tilt range + high rotation velocity, dramatically expanding surveillance coverage



TL.0105

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An	au	lar	R	a	n	α	e

vertical plane (elevation angle) horizontal plane (azimuth)

Angular Speed

horizontal plane (azimuth)

Positioning accuracy

Number of preset tilt positions

Maximum axial load

Maximum azimuth torque

Stationary part connection interface

Payload channels

Ethernet standard

GUI for control and settings

Control protocol

Number of presets (Pelco-D)

Nominal supply voltage

Power consumption

IP rating

Weight

Overall dimensions

Operating temperature

TL.0105

0 50° 0... 360° (∞)

0,01 ... 40 °/s

±0.3°

6

10 ka

0,4 ± (10 %) kgf·m

1 × Ethernet

up to 3× Ethernet

10/100BASE-T/TX

WFB

"Techlaser" protocol and Pelco-D

64

24VDC

85 W

IP65

3 kg

129,7×167,2×163,8 mm - 40 ... + 50 °C

PAN-TILT POSITIONER A TL.0105

High-maneuverability pan-tilt platform designed for precise azimuth positioning of mounted equipment at programmable speeds.

Features continuous 360° unlimited rotation with controlled velocity.

DESIGNED AND ENGINEERED FOR:

Designed for precision

positioning of antenna feed systems and RF components Light payload positioning

KEY DIFFERENCES FROM EXISTING SYSTEMS

The unit is manufactured using high-strength alloys and engineered for harsh environmental operation

Ergonomic port placement for payload connectivity in all positions

Quick-connect interfaces: 24V DC power outputs. (100Mbps) Ethernet ports





Maximum axial payload capacity: 20 kg



All-weather heavy-duty metal housing



Flexible connection options for pan-tilt positioners and payloads (cable and connector solutions)



Vibration and shock resistance



Horizontal rotation speed: up to 40°/s



Easy connectivity: 24VDC, Ethernet, RS-485



High positioning accuracy



360° continuous rotation with oscillating mode



Device weight: 6,5 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS;

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

PAN-TILT POSITIONER





High-maneuverability pan-tilt platform designed for precise positioning of mounted equipment within specified elevation and azimuth ranges at programmable speeds. Delivers exceptional tilt range + rapid rotation, maximizing observation angles and coverage



TL.0009 A TL.0192

3FLCIFIC
"
Angular Range vertical plane (elevation angle) horizontal plane (azimuth)
Angular Speed vertical plane (elevation angle) horizontal plane (azimuth)
Number of presets (Pelco-D)
Positioning accuracy
Forbidden zone setting
Maximum axial load
Maximum torque vertical plane (elevation angle)

horizontal plane (azimuth)

Control interface

GUI for control and settings

Max. RS-485 communication speed

Max. number of 485-bus connections

Ethernet standard

IP rating

Weight

Overall dimensions

Nominal supply voltage

Power consumption

Operating temperature

TL.0009	TL.0192

0° ... 360° (∞)

0.01...20(35)°/s 0.01...8°/s 0.01...50°/s 0.01...20°/s

> 64 0.3°

supported

20 kg

1.2 kgf×m 2.1 kgf×m 0.4 kgf×m 1.0 kgf×m

Ethernet / RS-485 (optional)

WFB

115200 bits/s

up to 255 units 10/100BASE-T/TX

IP65

6.5 kg 6.7 kg 166.5×134×219 mm

24 VDC

90 W (two-axis rotation mode)

- 40 ... + 50 °C

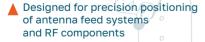


KEY DIFFERENCES FROM EXISTING SYSTEMS



DESIGNED AND

Short-to-medium range surveillance and monitoring systems



Payload positioning

The unit is manufactured using high-strength alloys

and engineered for harsh environmental operation

Side-mounted cable/connector ports on tilt axis for payload integration

Quick-connect interfaces: 24V power outputs, (100Mbps) Ethernet ports

^{*} color may vary upon agreement

^{**} cable length can be customized per customer request

^{***} dimensions may vary depending on pan-tilt positioner modification

^{****} maximum current to load depends on number of Ethernet channels





Maximum axial payload capacity: 40 kg



All-weather heavy-duty metal housing



Flexible connection options for pan-tilt positioners and payloads (cable and connector solutions)



Vibration and shock resistance



Horizontal rotation speed: up to 300°/s



Quick-connect interfaces: 48VDC, Gigabit Ethernet/RS-485 / fiber optic



High positioning accuracy: 0.05°



360° continuous rotation with oscillating mode



Device weight: 12 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS;

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

PAN-TILT POSITIONER



High-maneuverability pan-tilt platform designed for precise positioning of mounted equipment within specified elevation and azimuth ranges at programmable speeds. Delivers exceptional tilt range + rapid rotation, maximizing observation angles and coverage



▲ TL.0250

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vertical plane (elevation angle) horizontal plane (azimuth)

Angular Speed

horizontal plane (azimuth) vertical plane (elevation angle)

Maximum angular acceleration

horizontal plane (azimuth) vertical plane (elevation angle)

Number of presets (Pelco-D)

Positioning accuracy

Forbidden zone setting

Maximum axial load

Maximum torque

horizontal plane (azimuth) vertical plane (elevation angle)

Control interface

Max data rate

Payload channels

Stationary part connection interface

IP rating

Weiaht

Overall dimensions

Nominal supply voltage

Power consumption, max.

Operating temperature

TL.0250-100

300°/s 170°/s

500 °/s²

500°/s²

64

0.05°

supported

40 kg

6.5 kaf×m 5.9 kaf×m

RS-485

115200 bps Fiber optic link Ethernet & RS-485 (opt.)

1 Gbps

Ethernet & RS-485 (opt.)

1 × Ethernet / 1 × RS-485 (opt.)

IP65

12 kg

146×204×288 mm

48 VDC

800 W

- 40 ... + 50 °C



PAN-TILT POSITIONER A TL.0250

High-maneuverability pan-tilt platform designed for precise positioning of mounted equipment within specified elevation and azimuth ranges at programmable speeds. Delivers continuous 360° high-speed rotation for maximum coverage

DESIGNED AND ENGINEERED FOR:

- Short-to-medium range surveillance and monitoring systems
- Designed for precision positioning of antenna feed systems and RF components
- Searchlights and auxiliary payloads

KEY DIFFERENCES FROM EXISTING SYSTEMS

- The unit is manufactured using high-strength alloys and engineered for harsh environmental operation
- Ergonomic port placement for payload connectivity in all positions
- Quick-connect interfaces: 48V power outputs, (1 Gbps) Ethernet ports





Maximum axial payload capacity: 40 kg



All-weather heavy-duty metal housing



Flexible connection options for pan-tilt positioners and payloads (cable and connector solutions)



Vibration and shock resistance



Horizontal rotation speed: up to 100°/s



Easy connectivity: 48VDC, Gigabit Ethernet/ RS-485



Ultra-high positioning accuracy: 0.013°



360° continuous rotation with oscillating mode



Device weight: 19,5 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS;

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

PAN-TILT POSITIONER

▲ TL.0320

High-maneuverability pan-tilt platform designed for precise positioning of mounted equipment within specified elevation and azimuth ranges at programmable speeds. Delivers exceptional tilt range + rapid rotation, maximizing observation angles and coverage



TL.0320

Angular Range					
horizontal plane (azimuth) vertical plane (elevation angle)	0° 360°(∞) -73° +73°				
Angular Speed	75 173				
horizontal plane (azimuth)	0,02°100°/s				
vertical plane (elevation angle)	0,02°50°/s				
Maximum angular acceleration horizontal plane (azimuth)	200°/s²				
vertical plane (elevation angle)	200°/s²				
Maximum torque	0.0145				
horizontal plane (azimuth) vertical plane (elevation)	2.9 kgf×m 3.2 kgf×m				
Positioning accuracy	0,013 °				
Maximum axial load	40 kg				
Peak torque					
azimuth (horizontal) elevation (vertical)	8.4 kgf×m 8.2 kgf×m				
Control interface	Ethernet				
Ethernet standard	1 Gbps				
Control protocol	Pelco-D and TechLaser-protocol				
Nominal supply voltage	48 VDC				
Stationary part connection interface	1 × Ethernet 2 × Ethernet (opt.)				
Payload channels	1 × Ethernet				
IP rating	IP65				
Power consumption, max.	800 W				
Max. voltage to load	230 VDC				
Max. power to load	3500 W				
Weight	19,5 kg				
Operating temperature	- 40 + 50 °C				

DESIGNED AND ENGINEERED FOR:

Short-to-medium range surveillance and monitoring systems

Designed for precision positioning of antenna feed systems and RF components Laser systems and auxiliary payloads

KEY DIFFERENCES FROM EXISTING SYSTEMS

The unit is manufactured using high-strength alloys and engineered for harsh environmental operation

Ergonomic port placement for payload connectivity in all positions

Quick-connect interfaces: 48V power outputs, (1 Gbps) Ethernet ports



▲ TL.0251









Maximum axial payload capacity: 40 kg



All-weather heavy-duty metal housing



Reliable connectors for connection the positioner and payload



Vibration and shock resistance



Horizontal rotation speed: up to 300°/s



Easy connectivity: 48VDC, Gigabit Ethernet/ RS-485 / fiber optic



High positioning accuracy: 0.05°



360° continuous rotation with oscillating mode



Device weight: 8 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS;

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

PAN POSITIONER

▲ TL.0251

Designed for high-speed radar antenna positioning. The system provides smooth 360° azimuth rotation of mounted equipment at programmable speeds, with precise angular coordinate targeting





	TL.0251	TL.0251-050			
Angular Range	0° 36	60°(ω)			
Angular Speed	0.0150 °/s	0.01250 °/s			
Maximum angular acceleration	500	°/s²			
Number of presets (Pelco-D)	6	4			
Positioning accuracy	0,0	05°			
Forbidden zone setting	supp	orted			
Maximum axial load	40	kg			
Maximum torque	5.9 kgf×m	2.47 kgf×m			
Control interface	Ethernet/R	S-485 (opt.)			
GUI for control and settings	W	EB/			
Stationary part connection interface	1 × Ethernet / 1	× RS-485 (opt.)			
Payload interface	1000 BASE-T (fib	er optic optional)			
IP rating	IP.	65			
Weight	8	kg			
Overall dimensions	168x192	x188 mm			
Nominal supply voltage	481	/DC			
Power consumption, max.	350				
Operating temperature	- 40	+ 50 °C			

PAN POSITIONER TL.0251

High-maneuverability pan platform designed for precise azimuth positioning of mounted equipment at programmable speeds. Features continuous 360° rotation with high-speed operation

DESIGNED AND ENGINEERED FOR:

▲ Radar system integration

Designed for precision positioning of antenna feed systems and RF components Payload positioning

KEY DIFFERENCES FROM EXISTING SYSTEMS

The unit is manufactured using high-strength alloys and engineered for harsh environmental operation

Ergonomic port placement for payload connectivity in all positions

Quick-connect interfaces: 48V power outputs, (1 Gbps) Ethernet ports





Maximum axial payload capacity: 50 kg



All-weather heavy-duty metal housing



High positioning accuracy: 0.02°



Vibration and shock resistance



Ultra-high rotation speed: up to 1800°/s



Easy connectivity: 24VDC, Gigabit Ethernet/ RS-485 / fiber optic



360° continuous rotation with oscillating mode



Device weight: 12,5 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS;

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

PAN POSITIONER



Designed for high-speed radar antenna positioning. The system provides smooth 360° azimuth rotation of mounted equipment at programmable speeds, with precise angular coordinate targeting



▲ TL.0026 ▲ TL.0027

	TL.0026	TL.0027				
Angular Range	0° 36	0°(∞)				
Angular Speed	10°1	800°/s				
Positioning resolution	0,01°					
Positioning accuracy	0,0	2°				
Forbidden zone setting	suppo	orted				
Maximum axial load	50	kg				
Rated motor torque	1.06 k	gf×m				
Regenerative braking	supported					
Power-off brake	supported					
Encoder type	abso	lute				
Control interface	RS-485	Ethernet & RS-485				
Max data rate	115200 bps	1 Gb/s				
Payload interface	Single-mode fiber optic	1×Ethernet; 1×RS-485				
IP rating	IPe	56				
Weight	(9) 12,5	kg				
Overall dimensions	246×239	×158 mm				
Nominal supply voltage	24 \	/DC/				
Power consumption, max.	\\\O\\ 500	W/				
Operating temperature	- 40//	+70 °C				

PAN POSITIONER TL.0026 TL.0027

High-maneuverability pan platform designed for precise azimuth positioning of mounted equipment at programmable speeds. Features continuous 360° rotation with high-speed operation

DESIGNED AND ENGINEERED FOR:

Radar system integration

Designed for precision ** positioning of antenna feed systems and RF components Payload positioning

KEY DIFFERENCES FROM EXISTING SYSTEMS

The unit is manufactured using high-strength alloys and engineered for harsh environmental operation

Ergonomic port placement for payload connectivity in all positions

Quick-connect interfaces: 24V DC power, Gigabit Ethernet or fiber optic



▲ TL.0020



PAN POSITIONER





Maximum axial payload capacity: 100 kg



All-weather heavy-duty metal housing



High positioning accuracy: 0.05°



Vibration and shock resistance



Ultra-high rotation speed: up to 1100°/s



Easy connectivity: 24VDC, Gigabit Ethernet/ RS-485 / fiber optic



360° continuous rotation with oscillating mode



Device weight: 28 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS;

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

PAN POSITIONER



Designed for high-speed radar antenna positioning. The system provides smooth 360° azimuth rotation of mounted equipment at programmable speeds, with precise angular coordinate targeting





Angular Range

Angular Speed

Positioning accuracy

Oscillation mode

Maximum axial load

Rated motor torque

Control interface

GUI for control and settings

Addressable receivers

Max RS nodes per bus

Max control distance via RS line

Ethernet speed

IP rating

Weight

Overall dimensions

Nominal supply voltage

Power consumption, max.

Operating temperature

TL.0020

0° ... 360° (∞)

3 ... 1100 °/s

0.05°

supported

100 kg

1.6 kgf×m

RS-485/Ethernet

WEB

115200 bps

255 units

≥1500m

1 Gbps

IP54 28 kg

360×360×258 mm

24 VDC

450 W

- 40 ... + 50 °C



PAN POSITIONER TL.0020

High-maneuverability pan platform designed for precise azimuth positioning of mounted equipment at programmable speeds. Features continuous 360° rotation with high-speed operation

DESIGNED AND ENGINEERED FOR:

Radar system integration

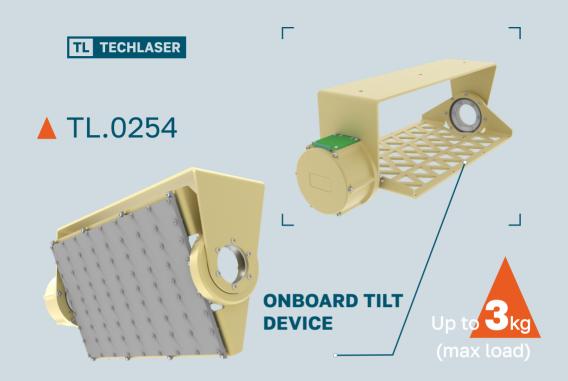
Designed for precision positioning of antenna feed systems and RF components Payload positioning

KEY DIFFERENCES FROM EXISTING SYSTEMS

The unit is manufactured using high-strength alloys and engineered for harsh environmental operation

Ergonomic port placement for payload connectivity in all positions

Quick-connect interfaces: 24V DC power, Gigabit Ethernet





Maximum axial payload capacity: 3 kg



High positioning accuracy



Easy connectivity: 48VDC, Ethernet



Vibration and shock resistance



Rotation speed: up to 720°/s. Acceleration: up to 3000°/s²



180° tilt range



Device weight: 3,7 kg

COMPLINES WITH THE FOLLOWING REQUIREMENTS;

- Functional requirements for transport security equipment
- TR CU 004/2011 "On safety of low-voltage equipment"
- TR CU 020/2011 "Electromagnetic compatibility of technical equipment»

ONBOARD TILT DEVICE



The onboard tilt mechanism is designed to position mounted equipment within specified elevation limits at controlled speeds. Suitable for communication antennas, radar systems, and jamming equipment





Angular Range

Angular Speed

Unlimited rotation

Maximum angular acceleration

Positioning accuracy

Forbidden zone setting capability

Maximum axial load

Maximum torque

Peak torque

Control interface

Configuration interface

IP rating

Weight

Overall dimensions

Nominal supply voltage

Power consumption, max.

Operating temperature

TL.0254

from -90° to +90°

0,1° ... 720°/s

not supported

3000°/s2

0.12°

supported

3 ka

2.4 kgf×m

7,4 kgf×m Ethernet

WEB & TechLaser-protocol

IP 20

3,7 kg

148x204x288 mm

48 VDC

350 W

- 40 ... + 50 °C

TILT DEVICE A TL.0254



High-maneuverability tilt platform designed for precise positioning of mounted equipment at programmable speeds. Suitable for communication antennas, radar systems, and electronic warfare payloads

DESIGNED AND ENGINEERED FOR:



Development of onboard monitoring systems based on antenna arrays



Designed for precision positioning of antenna feed systems and RF components

KEY DIFFERENCES FROM EXISTING SYSTEMS

The unit is manufactured using high-strength alloys and engineered for harsh environmental operation

Ergonomic port placement for payload connectivity in all positions

Quick-connect interfaces: 48V power outputs (100Mbps) Ethernet ports



Notes:





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