

TT033 Telemetry System

The non-contact 23-channel 12-bit telemetry system TT033 provides the conditioning, amplification and wireless transmission for up to 23 parallel strain gage and potentiometric signals from the rotating machine parts. The telemetry system provides the bandwidth up to 2 kHz in 15 measuring channels and in 8 channels 120 Hz accordingly. Signal transmission is achieved wirelessly by the digital telemetry. Contactless power supply is performed by an air transformer with the high-frequency current.

Rotation speed is up to 16 000 rpm.

In addition, the analogue output signal (± 5 V) version is available. By the analogue version, the bandwidth is 0 ... 500 Hz for 15 channels, 60 Hz for other 8 channels.

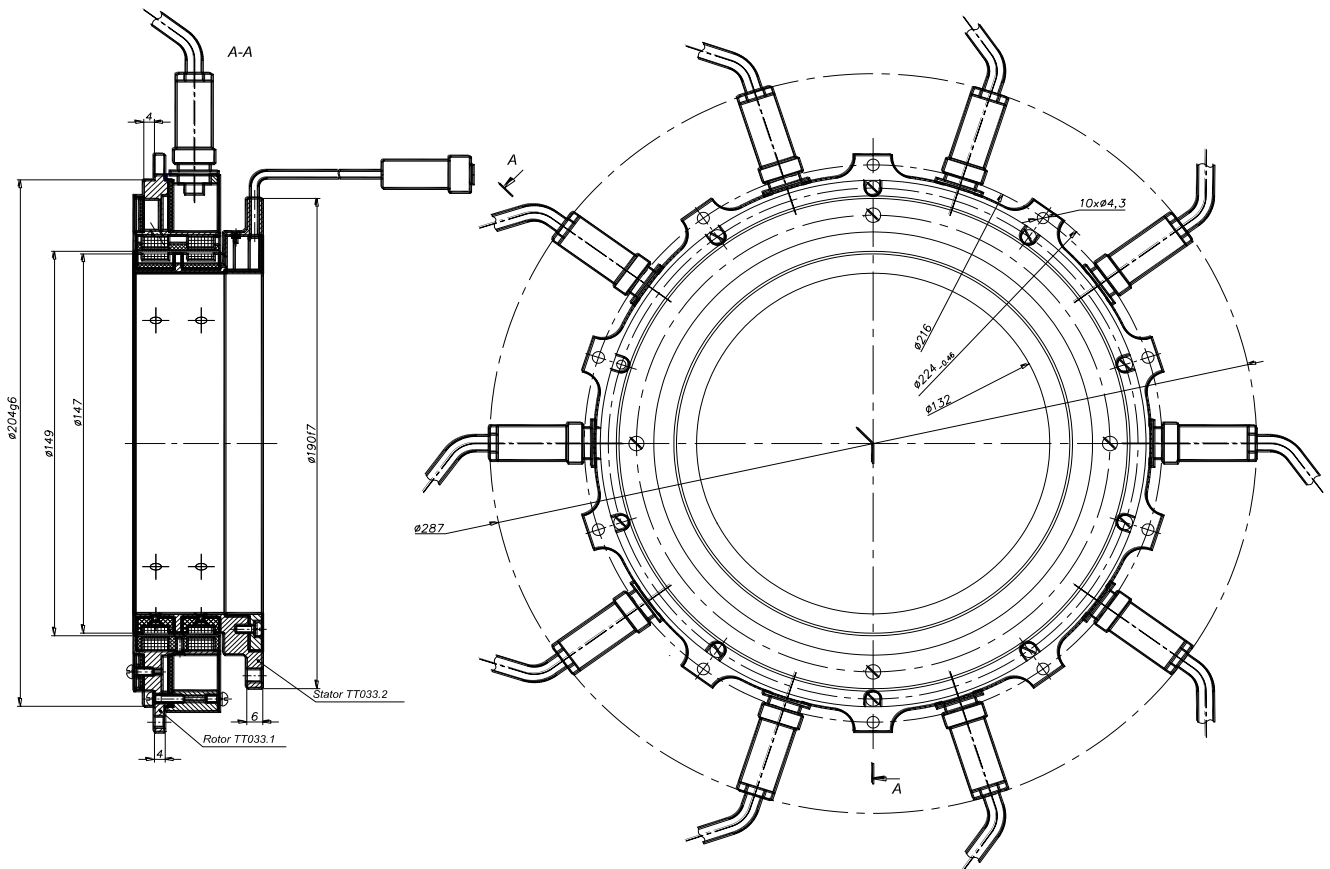
The software is in the scope of supply.



Features:

- non-contact signal transmission by means of the digital telemetry;
- power supply by the air transformer;
- 23 measuring channels;
- 15 high-speed measuring channels;
- transmitter rotation speed up to 20 000 rpm;
- output signal variants: analogue, digital;
- the special software in the scope of supply .

Dimensions, mm



Technical Data

Parameter	Unit	Value
Number of channels, total		23
fast		15
slow		8
Sample rate		
fast channels	kHz	4
slow channels	Hz	500
Strain gauge impedance	Ω	≥ 350
Measuring range β ,	mV/V	± 2
Accuracy	%	0.1
Resolution	bit	12
ADC Nonlinearity	bit	≤ 1
Bandwidth	kHz	≤ 2
Input temperature zero drift	$\mu\text{V}/\text{V } ^\circ\text{C}$	1×10^{-5}
Common-mode rejection	dB	≥ 45
Noise density	dB	≤ -60
Bridge excitation voltage	V	5 ± 0.5
Min 15 SG bridges impedance	Ω	≥ 15
Output interface of the measuring unit		USB 2.0
Dimensions:		
- rotor;	mm	$\varnothing 186 \times 31$
- stator;	mm	$\varnothing 140 \times 35$
- preamplifier;	mm	$55 \times 42 \times 17$
- measuring unit;	mm	$148 \times 190 \times 67$
Weight:		
- rotor	kg	≤ 0.8
- stator	kg	≤ 0.55
- measuring unit	kg	≤ 0.8
Transmission between the transmitter and receiver		contactless, electromagnetic
Measuring unit power supply:		
- voltage;	V	220 ± 22
- frequency;	Hz	50 ± 0.5
Power consumption	W	≤ 30
Operating temperature range	$^\circ\text{C}$	$0 \dots + 50$
Humidity by the ambient temperature + 35 $^\circ\text{C}$	%	≤ 95
Vibration resistance:		
- by frequency range 10 ... 60 Hz displacement amplitude	mm	≥ 0.35 (up to 60 Hz)
- for amplifier by frequency range 60 ... 500 Hz with acceleration	m/s^2	≥ 49 (over 60 Hz)
Impact resistance:		
Number	n	1 000
Duration	ms	2
Acceleration	m/s^2	≥ 150
Max rotor rotation speed	min^{-1}	10 000

Scope of supply

Rotor	1
Stator	1
Preamplifier	1
Measuring unit	1
Power cable	1
Signal cable	1
USB cable	1
Analogue decoder (optionally)	1
User manual	1
Software	1
Calibration method	1

All details describe the production in general form. Modifications that meet customer's specifications and the original design are available.

TILKOM Ltd

Phone/fax (+375-17) 284-11-83, +375 29 664 49 66.

P. Brovky str. 17-401, 220072, Minsk, Republic of Belarus

E-mail: tilkom1@mail.ru, info@tilkom.com www.tilkom.com