

JAQUET T400 Speed measurement, switching and indicating instruments

Features

- Converts absolute speed into an analog signal
- Including 2 limits (A/B) with programmable hysteresis
- One changeover relay assigned via binary input to limit (A or B)
- T411 and T412 models with display
- Isolated signal input with automatic trigger level adjustment
- Built in isolated sensor supply with sensor monitoring
- Open collector output of sensor frequency
- Accuracy class 0.05% for limits and 0.5% for analog signals
- Configuration and status via Windows® software
- 5 digit machine factor allowing configuration and display in machine units
- Wide tolerance 10...36 VDC power supply

The T400 Advantage

- Fast response to over speed conditions
- Germanischer Lloyd's and ABS approval for marine applications
- Digital display of speed value for the models T411 and T412
- 0/4...20 mA or 0/2...10 V analog output with rising or falling characteristics
- Adaptive trigger provides high noise immunity e.g. with electromagnetic sensors
- Digital input for direct treatment of frequency signals
- 2 possible relay configuration sets e.g. for start up bridging, controlled via binary inputs
- Pluggable terminals
- Integrated 2 or 3 wire sensor monitoring and system watchdog

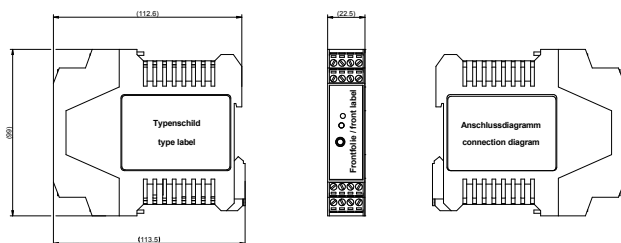
One channel tachometer family T400

Type and part numbers	T401.00	4...20mA output	383Z-05307
	T402.00	2...10 V output	383Z-05308
	T411.00	display; 4...20 mA output	383Z-05318
	T412.00	display; 2...10 V output	383Z-05319
	T411.03	display; 5 VDC sensor supply; 4...20 mA output	383Z-05595
	T412.03	display; 5 VDC sensor supply; 2...10 V output	383Z-05596
Optional accessories	Power supply	100-240 VAC / 24 VDC / 1 A	383Z-05764
	Interface cable RS232 for configuration		830A-36889
	USB adapter for interface cable		830A-37598
Technical Data			
Measuring range	Lowest: 0...1.000 Hz	Highest: 0...35.00 kHz	
Measurement time	Configurable min. measurement time (tM): 2/5/10/20/50/100/200/500 ms, 1/2/5 s		
Reaction time	Current output:	Typical tM + 7.5 ms	Maximum Input period + tM + 7.5 ms
	Relays:	Typical tM + 10.5 ms	Maximum Input period + tM + 10.5 ms
Accuracy	0.5% referred to the analog output end of range value		
Analog output (1)	T401/T411: Current output 0...20 mA resp. 4...20 mA T402/T412: Voltage output 0...10 V resp. 2...10 V Programmable rising or falling transfer function (min. end value 1.00 Hz) Load T401/T411: max. 500 Ohms corresponding to a maximum of 10 V Load T402/T412: min. 7 kOhm corresponding to a maximum of 1.4 mA Maximum open circuit voltage: 12 V Resolution: 12 bit corresponding to 1:4096 Maximum linearity error: 0.1 % Temperature drift: typ. ± 100 ppm/degree K, max. ± 300 ppm/degree K		
Set points /relay (2)	Hysteresis: For each limit an upper and a lower set point may be set independently Change over contact: max. 250 VAC, 1250 VA (DC: see operating instructions)		
Data I/O	RS232 interface with +5 V-CMOS level 3-pole. 3.5 mm stereo headphone connector on the front side.		
Sensor inputs (1)	Input resistance	Analog 30 kOhm / Digital 46 kOhm	
	Frequency range	0.01 Hz / 35 kHz	
	Trigger level	Analog input: Adaptive trigger level from 28 mV to 6.5 V or 250 mV to 6.5 V peak depending on the amplitude of the input signal. Digital input: Digital fixed trigger at 3 V ± 1.5 V hysteresis	
Sensor supply	Standard	+ 14 V, max. 35 mA, short-circuit proof	
	S5 version	+ 5 V, max. 35 mA, short-circuit proof Built-in pull up resistor 820 Ohm for connection of two-wire transmitters or daisy chaining of T400's	
Sensor monitoring	3 wire sensors: programmable current consumption limits of 0.5...35mA. Outside the selected range the sensor is signaled as faulty. Electromagnetic sensors: continuity checked. Open circuit signaled as a fault. None: Both sensor monitoring functions may be disabled.		
Open collector output (1)	Galvanically separated output of sensor frequency		

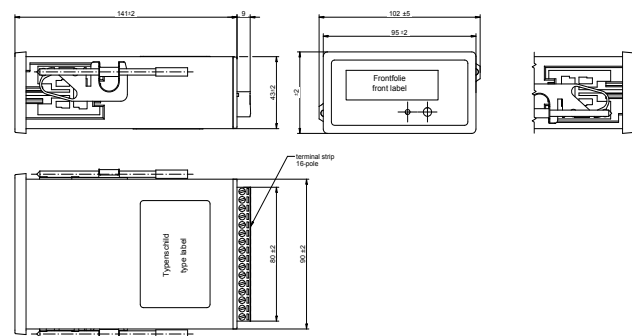
Binary inputs (1)	For external selection between two sets (A/B) of programmable relay control and acknowledge functions: (No external pull up needed) Low active :U < +1.5V High (open) :U > +3.5V
Environmental	KUE according to DIN 40 040 Operating temperature: - 40...+85 °C Storage temperature: -40...+90 °C
Power supply	10...36 VDC power consumption max. 3 W
Insulation	Galvanic separation between power supply, current output and the sensor power supply. Isolation 700 VDC / 500 VAC. Relay contact isolation: 1500 AC
EMC	Electromagnetic compatibility: Radiation in accordance with international standards and EN 50081-2. Immunity in accordance with international standards and EN 50082-2 Conducted emissions: CISPR 16-1, 16-2 Radiated emissions: EN 55011 Electrostatic discharge: IEC 61000-4-2 Electromagnetic fields: IEC 61000-4-3 Conducted fast transients: IEC 61000-4-4 Conducted slow transients: IEC 61000-4-5 Conducted high frequency: IEC 61000-4-6 Pulse modul. elec. field: ENV 50140 Power frequency magnetic field: IEC 1000-4-8
Standards	EN 50155, GL / Germanischer Lloyd, ABS

Dimensions

T401/402



T411/412



Rail	Rail DIN 46277-3 (EN 50022) or mounting plate to DIN 43660 (41612)
Housing	Protection class IP40, terminals IP20
Terminals	Pluggable
Weight	T401/T402: 150 g, T411/T412: 210 g

T400 systems are supplied with a full documentation and the T400 Windows® Software.

The software allows:

- Quick and easy configuration of all operating parameters
- Unit interrogation of identity and parameters
- PC display of current measurement and relay status
- Archiving and printing of the configuration

RS-232 cable not included, see page 2 for optional accessories.

Please note: Information is subject to change. For more technical information please refer to operating instructions.

Swiss know-how and quality matched to your demands

JAQUET manufactures speed sensors in quantities from 1 to millions per project per year. These typically customer specific solutions add value through being matched to individual applications. **Since 1889, a spirit of excellence complementing tradition and innovation.**



Automotive turbochargers

Turbocharger for trucks, passenger cars, construction equipment

- Speed of VG/VNT turbochargers
- Gearbox shaft and retarder speed



Railway systems

- Optimum traction control
- WSP (wheel slide protection) systems
- Speed information for automatic train control



Power generation

Gas, hydro, steam and wind turbines

- Overspeed protection
- Speed measurement and control



Hydraulics

Agricultural machinery, construction and mining equipment, cranes, ROV – remote operated vehicles

- Motors and pumps, flowrate measurement
- Position measurement, traction synchronization



Diesel and gas engines

Large diesel and gas engines in marine, rail, off-road applications and power production.

- Cam and crank shaft for dynamic position
- Turbocharger speed, engine diagnostics

Quality systems

ISO TS 16949
ISO 9001
AS 9100
IRIS

JAQUET Technology Group AG

Thannerstrasse 15
CH-4009 Basel
Switzerland
info@jaquet.com
www.jaquet.com
+41 61 306 8822

JAQUET China

No. 168 North Taiping Road
Taicang, 215400
Jiangsu Province
P. R. China
info@speedandspin.cn
+86 (512) 8270 6601

JAQUET North America, Inc.

25400 US Hwy. 19 N., Suite 192
Clearwater, Florida 33763
salesna@jaquet.com
www.jaquet.com
+1 800 655 1424