



GREEN LINE

INDUSTRIAL SPEED SENSORS

Industrial speed sensors and tachometers

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The GreenLine family is the newest line of industrial speed sensors and control modules from JAUQUET TECHNOLOGY GROUP. These sensors and tachometers provide solutions for speed sensing and control applications both for end users and small OEM's. Our offering of 50 plus sensors and 4 tachometer modules allows straight forward signal detection, monitoring and conditioning.












Sensors are available with VR or Hall technologies with cable or connector interfaces. Sizes range from 3/8-24 and M10X1 to 3/4-16 and M16X1.5. Sensor capability ranges from zero speed to high frequency detection and all units have sealed sensing areas to prevent liquid intrusion. Also available are direction sensing units and hazardous location versions for both North America (NEC, CEC) and Europe (ATEX) (Q4 2007).

The JAUQUET T400 series F-DC tachometers are available with current or voltage analog output and they also provide a sine to square wave converter/re-transmit signal, sensor health monitoring and a high/low limit relay. All inputs and outputs are galvanically isolated and set up is with supplied software via a PC using the PC-T400 cable. Available packages include DIN-rail mount and panel mount with display.

The new GreenLine sensors and tachometers can be used to provide either a complete measurement chain solution, or individual speed sensing products as needed. Technical product overviews follow in this brochure, while complete data sheets are available on www.jaquet.com under the GreenLine sensors link.












VR ELECTROMAGNETIC SPEED SENSORS

- **Temperature rating:** -40...125°C • **Signal output:** Frequency and amplitude proportional to speed
- **Frequency range:** up to 20 kHz.

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	E12A			
Threaded M12x1 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 60 mm Thread length: 40 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E12S			
Threaded M12x1 stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 69 mm Thread length: 50 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16A			
Threaded M16x1.5 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 60 mm Thread length: 40 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16A25			
Threaded M16x1.5 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 84 mm Thread length: 64 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16A40			
Threaded M16x1.5 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 122 mm Thread length: 102 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16AM			
Threaded M16x1.5 stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 61 mm Thread length: 33 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16AM25			
Threaded M16x1.5 stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 92 mm Thread length: 64 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16AM40			
Threaded M16x1.5 stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 130 mm Thread length: 102 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16S			
Threaded M16x1.5 stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 69 mm Thread length: 50 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16S25			
Threaded M16x1.5 stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 83 mm Thread length: 64 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E16S40			
Threaded M16x1.5 stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 121 mm Thread length: 102 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser







VR ELECTROMAGNETIC SPEED SENSORS - continued

- **Temperature rating:** -40...125°C
- **Signal output:** Frequency and amplitude proportional to speed
- **Frequency range:** up to 20 kHz.

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	E38A			
Threaded 3/8"- 24 UNF stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 48 mm Thread length: 34 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E38S			
Threaded 3/8"- 24 UNF stainless steel IP67	Cable, silicone, 1m 0.34 mm ² , AWG 22	Overall length: 54 mm Thread length: 34 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58A			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 60 mm Thread length: 40 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58A25			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 84 mm Thread length: 64 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58A40			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 121 mm Thread length: 102 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58AM			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 61 mm Thread length: 33 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58AM25			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 92 mm Thread length: 64 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58AM40			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 130 mm Thread length: 102 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58S			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1m 0.34 mm ² , AWG 22	Overall length: 69 mm Thread length: 50 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58S25			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1m 0.34 mm ² , AWG 22	Overall length: 83 mm Thread length: 64 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	E58S40			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1m 0.34 mm ² , AWG 22	Overall length: 121 mm Thread length: 102 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser





DIGITAL ELECTROMAGNETIC SPEED SENSORS

- **Temperature rating:** -40...125°C • **Signal output:** Frequency proportional to speed • **Frequency range:** up to 20 kHz
- **Supply voltage:** 5...32 VDC

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	EV58AM			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 61 mm Thread length: 33 mm	Square wave, NPN with 2.2 kOhm pull up	M: .5 or larger DP: 50 or coarser
	EV58AM25			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 92 mm Thread length: 64 mm	Square wave, NPN with 2.2 kOhm pull up	M: .5 or larger DP: 50 or coarser
	EV58AM40			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 130 mm Thread length: 102 mm	Square wave, NPN with 2.2 kOhm pull up	M: .5 or larger DP: 50 or coarser
	EV58S			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 69 mm Thread length: 50 mm	Square wave, NPN with 2.2 kOhm pull up	M: .5 or larger DP: 50 or coarser
	EV58S25			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 83 mm Thread length: 64 mm	Square wave, NPN with 2.2 kOhm pull up	M: .5 or larger DP: 50 or coarser
	EV58S40			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 121 mm Thread length: 102 mm	Square wave, NPN with 2.2 kOhm pull up	M: .5 or larger DP: 50 or coarser













VR - ELECTROMAGNETIC SPEED SENSORS - EX ATEX Zone 1 / CSA Class 1 Div 1

- **Temperature rating:** -40...125°C • **Signal output:** Frequency and amplitude proportional to speed
- **Frequency range:** up to 20 kHz. **CERTIFIED FOR USE IN EXPLOSIVE ATMOSPHERES.**

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	EX58H			
Threaded 5/8"- 18 UNF stainless steel IP67	1/2 - 14 NPT Cable PTFE, 3 m	Overall length: 88 mm Thread length: 48 mm	Sine wave output 250 Ohm / 70 mH coil	M: 1.0 or larger DP: 25 or coarser
	EX58H35			
Threaded 5/8"- 18 UNF stainless steel IP67	1/2 - 14 NPT Cable PTFE, 3 m	Overall length: 120 mm Thread length: 89 mm	Sine wave output 250 Ohm / 70 mH coil	M: 1.0 or larger DP: 25 or coarser
	EX34H			
Threaded 3/4"- 16 UNF stainless steel IP67	1/2 - 14 NPT Cable PTFE, 3 m	Overall length: 88 mm Thread length: 48 mm	Sine wave output 250 Ohm / 70 mH coil	M: 1.0 or larger DP: 25 or coarser
	EX34H35			
Threaded 3/4"- 16 UNF stainless steel IP67	1/2 - 14 NPT Cable PTFE, 3 m	Overall length: 120 mm Thread length: 89 mm	Sine wave output 250 Ohm / 70 mH coil	M: 1.0 or larger DP: 25 or coarser



VR ELECTROMAGNETIC SPEED SENSORS - EX ATEX Zone 2/ CSA Class 1 Div 2

- **Temperature rating:** -40...125°C • **Signal output:** Frequency and amplitude proportional to speed
- **Frequency range:** up to 20 kHz. **CERTIFIED FOR USE IN EXPLOSIVE ATMOSPHERES.**

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	EX10A			
Threaded M10x1 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 48 mm Thread length: 34 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX10S			
Threaded M10x1 stainless steel IP67	Cable, PTFE, 3m 0.21 mm ² , AWG 24	Overall length: 54 mm Thread length: 34 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX12A			
Threaded M12x1 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 60 mm Thread length: 40 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX12A35			
Threaded M12x1 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 109 mm Thread length: 89 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX38A			
Threaded 3/8"- 24 UNF stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 48 mm Thread length: 34 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX38S			
Threaded 3/8"- 24 UNF stainless steel IP67	Cable, PTFE, 3m 0.21 mm ² , AWG 24	Overall length: 54 mm Thread length: 34 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX58AM			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 61 mm Thread length: 33 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX58AM25			
Threaded 5/8"- 24 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 92 mm Thread length: 64 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX58AM40			
Threaded 5/8"- 24 UNF stainless steel IP67	Connector, MS 3102A-10SL-4P, 2 pin	Overall length: 130 mm Thread length: 102 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX58S			
Threaded 5/8"- 24 UNF stainless steel IP67	Cable, PTFE, 3 m, 0.21 mm ² , AWG 24	Overall length: 69 mm Thread length: 50 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX58S25			
Threaded 5/8"- 24 UNF stainless steel IP67	Cable, PTFE, 3 m, 0.21 mm ² , AWG 24	Overall length: 83 mm Thread length: 64 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser
	EX58S40			
Threaded 5/8"- 24 UNF stainless steel IP67	Cable, PTFE, 3 m, 0.21 mm ² , AWG 24	Overall length: 121 mm Thread length: 102 mm	Sine wave output 850 Ohm, 135 mH	M: .5 or larger DP: 50 or coarser


DIFFERENTIAL HALL EFFECT SPEED SENSORS

- **Temperature rating:** -40...125°C • **Signal output:** Frequency proportional to speed • **Frequency range:** 5 Hz to 20 kHz
- **Supply voltage:** 8...32 VDC

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	D12A			
Smooth 10.8 mm OD flange mount IP67	Connector, M12X1, 4 pin, sealed	Overall length: 60 mm Shaft length: 25.7 mm	Square wave Push-pull output	M: .5 or larger DP: 50 or coarser
	D12P			
Threaded M12x1 stainless steel IP67	Cu cable insulation PTFE, 0.35 m, 021 mm ² , AWG 24 with connector 3 pin AMP	Overall length: 69 mm Thread length: 50 mm	Square wave Push-pull output	M: .5 or larger DP: 50 or coarser






DUAL CHANNEL HALL EFFECT SPEED AND DIRECTION SENSORS

- **Temperature rating:** -40...125°C • **Signal output:** Frequency proportional to speed (channel 1) and direction (channel 2)
- **Frequency range:** 0 Hz to 15 kHz • **Supply voltage:** 11...32 VDC

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	Y12AD			
Threaded M12x1 with O-ring and locator key	Connector, M12X1, 4 pin, sealed	Overall length: 75 mm Shaft length: 36 mm	Square wave output NPN plus direction line	M: 1.0 or h larger DP: 25 or coarser

ZERO SPEED HALL EFFECT SPEED SENSORS

- **Temperature rating:** -40...125°C • **Signal output:** Frequency proportional to speed • **Frequency range:** 0 Hz to 15 kHz
- **Supply voltage:** 8...25 VDC

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	F12A			
Threaded M12x1 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 60 mm Thread length: 40 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F12S			
Threaded M12x1 stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 69 mm Thread length: 50 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F16A			
Threaded M16x1.5 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 60mm Thread length: 40mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F16A25			
Threaded M16x1.5 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 84 mm Thread length: 64 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F16A40			
Threaded M16x1.5 stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 121 mm Thread length: 102 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser

ZERO SPEED HALL EFFECT SPEED SENSORS continued

- **Temperature rating:** -40...125°C • **Signal output:** Frequency proportional to speed • **Frequency range:** 0 Hz to 15 kHz
- **Supply voltage:** 8...25 VDC

HOUSING	CONNECTION	MECHANICAL	ELECTRICAL	MODULE / DP RANGE
	F16S			
Threaded M16x1.5 stainless steel IP67	Cable, Silicone, 1m 0.34 mm ² , AWG 22	Overall length: 69 mm Thread length: 50 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F16S25			
Threaded M16x1.5 stainless steel IP67	Cable, Silicone, 1m 0.34 mm ² , AWG 22	Overall length: 83 mm Thread length: 64 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F16S40			
Threaded M16x1.5 stainless steel IP67	Cable, Silicone, 1m 0.34 mm ² , AWG 22	Overall length: 121 mm Thread length: 102 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F58A			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 60 mm Thread length: 40 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F58A25			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 84 mm Thread length: 64 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F58A40			
Threaded 5/8"- 18 UNF stainless steel IP67	Connector, M12X1, 4 pin, sealed	Overall length: 121 mm Thread length: 102 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F58S			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1m 0.34 mm ² , AWG 22	Overall length: 69 mm Thread length: 50 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F58S25			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 83 mm Thread length: 60 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser
	F58S40			
Threaded 5/8"- 18 UNF stainless steel IP67	Cable, silicone, 1 m 0.34 mm ² , AWG 22	Overall length: 121 mm Thread length: 102 mm	Square wave, NPN with 2.7 kOhm pull up	M: 1.0 or larger DP: 25 or coarser

MATING CABLE ASSEMBLY for all sensors with M12x1 connector



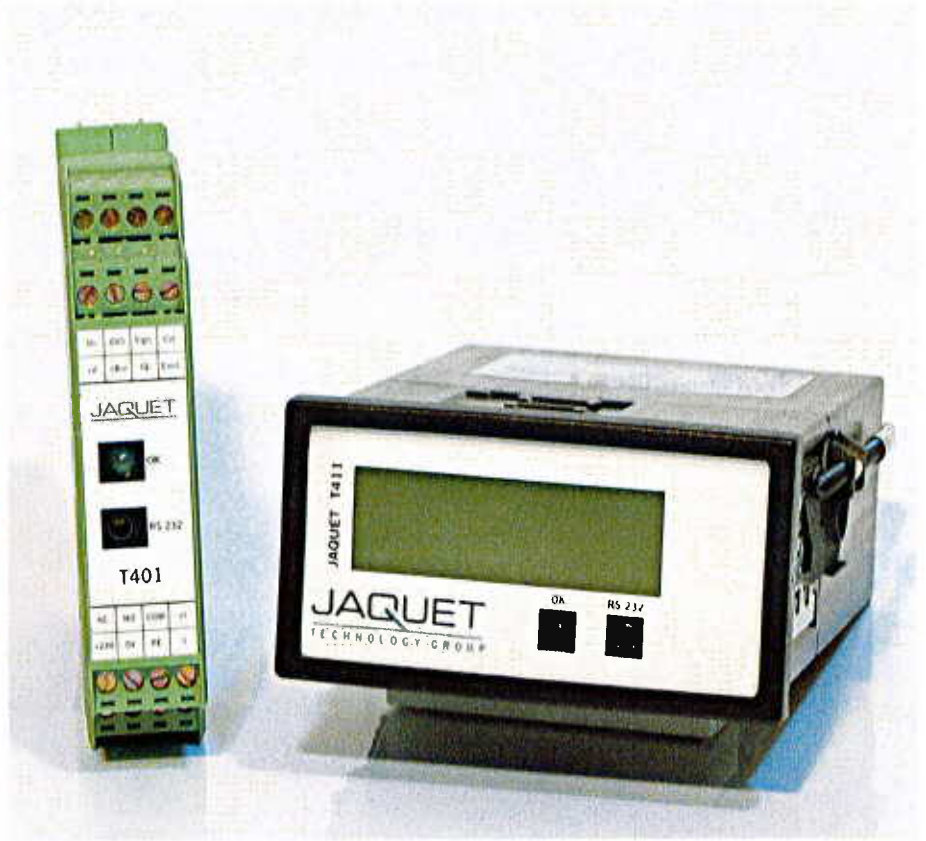
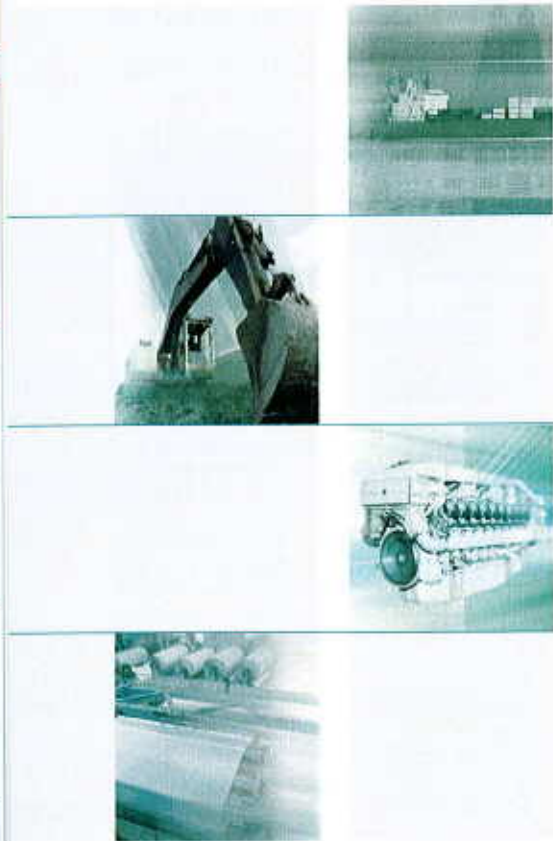
C20A

- **Material:** PU (poly-urethane) • **Length:** 2 m • **Color:** Green • **Temperature rating:** -20...85°C
- **Connector:** M12 standard, overmoulded. Pin 1 = brown, Pin 2 = white, Pin 3 = blue, Pin 4 = black



C65A

- **Material:** PTFE • **Length:** 6.5 m • **Color:** White • **Temperature rating:** Cable -40...260°C / Connector -30...90°C
- **Connector:** M12 standard, overmoulded. Pin 1 = red, Pin 2 = black, Pin 3 = brown, Pin 4 = yellow



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

T400 ADVANTAGE

- Fast response to over speed conditions
- Germanischer Lloyd's 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
- 2 possible relay configuration sets e.g. for start up bridging, controlled via binary inputs
- Plug able terminals - programmable measurement & analog output filter times
- Integrated 2 or 3 wire sensor monitoring and system watchdog

TYPICAL APPLICATIONS

- Diesel engine start control and overspeed protection
- Micro turbine measurement and protection
- Turbocharger speed measurement
- Machine protection in safety critical applications
- Universal speed measurement and indication

One channel tachometer with relay and 0/4-20 mA output:

Type number: T401 (without display)	Product number: 383Z-05307
Type number: T401 S5 (without display)	Product number: 383Z-05671
Type number: T411 (with display)	Product number: 383Z-05318
Type number: T411 S5 (with display)	Product number: 383Z-05595


One channel tachometer with relay and 0/2-10 V output:

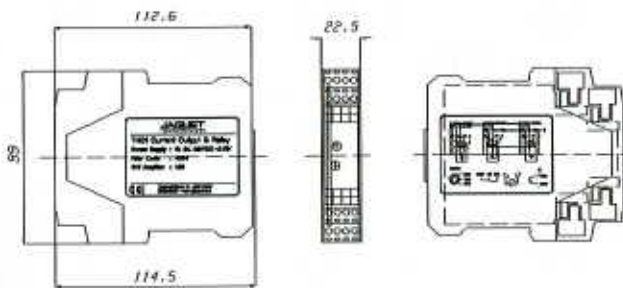
Type number: T402 (without display)	Product number: 383Z-05308
Type number: T402 S5 (without display)	Product number: 383Z-05672
Type number: T412 (with display)	Product number: 383Z-05319
Type number: T412 S5 (with display)	Product number: 383Z-05596

Technical Data

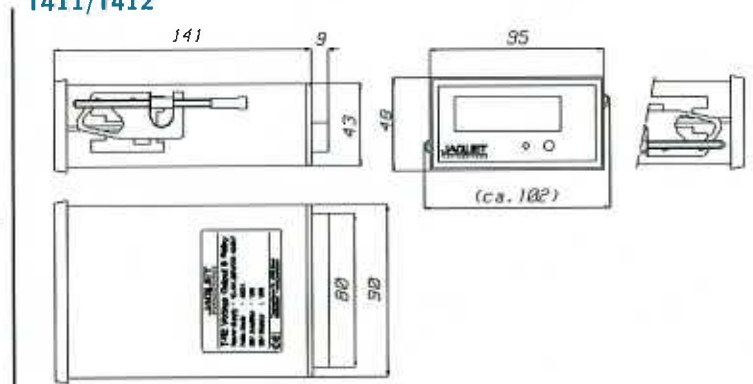
Measuring range	Lowest: 0...1.000 Hz	Highest: 0...35.00 kHz
Accuracy	0.5% referred to the analog output end of range value	
Analog output	T401/T411: Current output 0...20 mA resp. 4...20 mA T402/T412: Voltage output 0...10V resp. 2...10 V Programmable rising or falling transfer function (min. end value 1.00Hz) Load T401: max. 500 Ohms corresponding to a maximum of 10 V Load T402: min. load 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	Range: See measuring range above 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	Serial EIA RS 232 interface with +5 V-CMOS level 3-pole. 3.5 mm stereo headphone connector on the front side, common reference potential with negative pole of sensor supply.	
Measuring / response time	The min. measuring time (fix-time) is programmable: 2/5/10/20/50/100/200/500 ms, 1/2/5 s For input frequencies with a period SHORTER than the fix time: <i>Analog output:</i> - Maximum: 2* fix time + max. period of the input frequency + 7.5 ms - Typical: fix time + 1 period of the input frequency + 7.5 ms <i>Relay:</i> - Maximum: 2* fix time + max. period of the input frequency + 10.5 ms - Typical: fix time + 1 period of the input frequency + 10.5 ms For input frequencies with a period LONGER than the fix time: <i>Analog output:</i> - Maximum: Period of the input frequency + 7.5 ms <i>Relay:</i> - Maximum: Period of the input frequency + 10.5 ms	
Sensor input	Input resistance: 30 kOhm Frequency range: (-3 dB): 0.01 Hz/35 kHz Trigger level: adaptive trigger level from 20 mV to 5 V or 500 mV to 5 V (factory configuration) peak depending on the amplitude of the input signal	
Sensor supply	Built-in sensor power supply: + 14 V, max 35 mA, short-circuit proof / + 5 V for S5 versions Built-in pull up (+14 V / + 5 V) and pull down (0 V) resistor 820 Ohm for connection of two-wire transmitters or daisy chaining of T400's	
Sensor monitoring	Powered 2 and 3 wire sensors: min. and max. current consumption values are selectable in the range 0.5...25mA. Sensors with consumption below min. or above max. current will be signalled as defective. Electromagnetic/VR sensors: Open circuit state of sensors. This supervision runs permanently. Both monitoring functions can be switched off via the configuration software.	
Open collector output	Galvanically separated output of sensor frequency	

Binary inputs	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 Relative humidity up to 75% average over one year period, up to 90% max. for 30 days
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

Dimensions: T401/T402



T411/T412



Rail	Rail DIN 4622713 (EN 50022) or mounting plate to DIN 43660 (46121)
Housing	Protection class IP40, terminals IP20
Terminals	See operating instructions
Weight	T401/T402: 150 g T411/T412: 210 g

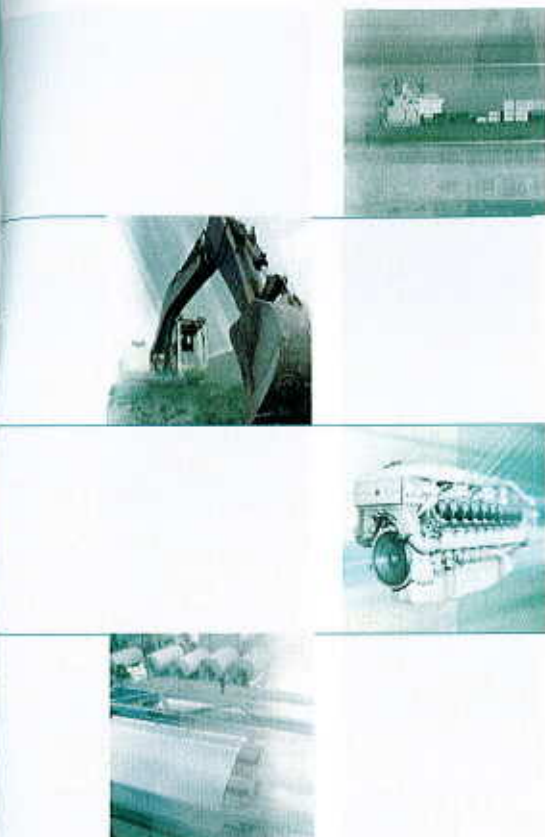
Full technical details can be seen in the operating instructions.

T401/T402 and T411/T412 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.



JAQUET Handheld tachometers - HO 100, HM 100 and HC 100

TYPE AND PRODUCT NUMBERS

OPTICAL HAND TACHOMETER

Type number: HO 100
Product number: 372Z-05668

CONTACT HAND TACHOMETER

Type number: HM 100
Product number: 372Z-05669

COMBINATION SET

Type number: HC 100
Product number: 372Z-05670

JAQUET HO 100 Optical Tachometer uses precision optics and reflective tape to measure the RPM of rotating devices such as fans and gears.

JAQUET HM 100 Contact Tachometer uses convex and concave attachments to measure RPM. It also has a built-in wheel to measure the linear surface speed of moving devices such as conveyors and treadmills.

General specifications

Display	5-digit LCD display
Range selection	Automatic range selection
Time base	4 MHz quartz crystal
Sampling time	1 second (≥ 60 rpm); > 1 second (10 to 60 rpm)
Photo tachometer distance	2 to 12" (5 to 30 cm)
Operating temperature	0...50 °C (32...122 °F)
Operating humidity	80% RH max.
Power supply	9V battery
Battery life	40 hours (approx.)
Applicable standards	HO 100: EN 50081-1/1992 (EN 55022) HM 100: EN 50082-1/1997 (EN 55024)
Dimensions	HO 100: 124 x 51 x 33mm HM 100: 150 x 51 x 33mm HO 100: 114 g / HM 100: 142 g
Weight	
Range	
Measurement	
Rotation - HO 100 Optical	10.000 to 99999 rpm
Rotation - HM 100 Contact	10.000 to 9999 rpm
Surface Speed - HM 100 Contact	1.0000 to 1999.9 m/min
Accuracy	\pm (0.1% reading + 2 digits) \pm (0.1% reading + 2 digits) \pm (1.5% reading + 2digits)

Range specifications

Measurement
Rotation - HO 100 Optical
Rotation - HM 100 Contact
Surface Speed - HM 100 Contact

JAUQUET TECHNOLOGY GROUP offers the world's most versatile and advanced range of solutions for the detection, measurement, diagnosis and management of rotational speed.

Our industry and application specific expertise ensures that you will achieve an optimum solution. Completely matched to your individual requirements, meeting key industrial standards and certifications, our products help boost the performance of your machinery while reducing cost of ownership.

TYPICAL INDUSTRIES SERVED

- Automotive and truck
- Diesel / Gas engines
- Hydraulics
- Railway
- Turbines
- Turbochargers
- Industrial machinery

PRODUCTS – SPEED SENSORS

- Various technologies
- Standard, custom and OEM models
- For demanding applications, e.g. 300,000 rpm, temperature up to 320 °C / 600 °F, high vibration, shock to 200 g, etc.
- GreenLine speed sensors for general applications
- Ex models for hazardous areas
- Pole bands and target wheels available where needed

PRODUCTS – SYSTEMS

- Multi-channel overspeed protection systems
- 1–2 channel measurement, protection and control modules
- Engine diagnostic systems
- Redundant speed measurement and indication

SPECIAL PROJECT EXAMPLES

- An automotive linear movement sensor
- Integrated power and torque measurement for display and gearbox control
- Naval spec. turbine protection for nuclear submarines
- Speed measurement in turreted, tracked vehicles

QUALITY MANAGEMENT AND STANDARDS

- Quality management: TS 16949 and ISO 9001, ZELM ATEX 1020, KWU
- Sensors: GL, KWU, TÜV, ATEX, EN 50155, NF F 16-101 102, ABS, EMC
- Systems: IEC 61508 SIL 2 and SIL 3, API 670, GL, TÜV, KWU, EX
- Environmental: RoHS - EU directive 2002/95/EC

JAUQUET – YOUR PARTNER

- Efficient and professional service - JAUQUET TECHNOLOGY GROUP is headquartered in Basel, Switzerland and has subsidiaries in Belgium, China, Germany, the Netherlands, United Kingdom and United States along with a worldwide distributor and end-user service network.
- Flexible production quantities; from 1 to millions per project
- Reduction of total costs by intelligent and cost-effective solutions
- Fast turn around time