

## Digital • Analog • Converters • Switches Sense • Measure • Control • Protect

SINGLE CHANNEL TACHOMETERS  
 DUAL CHANNEL MULTI-FUNCTION  
 TACHOMETERS

MULTI-CHANNEL OVERSPEED  
 PROTECTION SYSTEMS

HANDHELD TACHOMETERS

From hydro electric power stations high in the Pyrenees to nuclear submarines at the bottom of the ocean, JAQUET tachometer products are in service providing optimum solutions for measurement, control and that all important machine protection function.

Type tested and qualified for demanding applications, JAQUET products provide availability with safety, because where the protection of valuable investments is concerned compromise is out.

Whether single or multi channel, with simple or complex voting logic, we promise you the fastest reaction time, maximum security and optimum availability.

Please let us know how we can assist you in selecting the optimal product - or in creating a turn key solution utilizing JAQUET's complete measurement chain. Drawing on our tried and tested experience, we can be sure to give you an immediate suggestion that matches your individual requirements. We take pride in providing you with an efficient solution which also helps reduce your total costs. Let JAQUET's expert application knowledge, long experience and top product quality protect your investment.

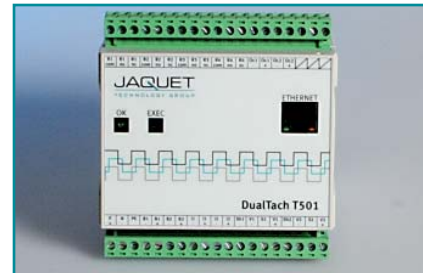
**We do it all - we do it now. We are ready for your signal.**

### 1-2 CHANNEL TACHOMETERS

#### JAQUET T400 series



#### JAQUET Dualtach T500



#### Product description

Single channel tachometers, with or without display; 0/4...20mA converter & speed switch in one; Relay and open collector frequency output.

DualTach tachometer with 2 frequency & 2 binary inputs; 2 analogue, 4 relay and 2 open collector outputs; for complex measurement, control and protection.

#### Typical applications

Engine start control and over-speed protection.

Micro turbine EOST.

Turbo speed measurement. Universal speed indication.

Engine + turbo speed.

Dual turbo speed on V engines.

2 channel turbine monitoring and protection.

#### The JAQUET advantage

2 set points. Adaptive trigger. Fast response. 2 / 3 wire sensor monitoring. Plug-able terminals. Accuracy 0.05% for set points, 0.5% for analogue signals.

Configuration and status viewing via PC software.

ABS, Lloyds and EN50155 approval.

Speed and direction provided when used with JAQUET DSY sensors.

4 parameter sets each with 6

System Limits, a logical combination of inputs / parameters e.g. speed > limit with temp < limit as indicated by binary input.

Math function e.g. A/B, acceleration.

Adaptive trigger. Fast response.

Accuracy 0.002% for limits, 0.025% for analogue signals.

Configuration / status viewing via resident software and Ethernet interface.

Lloyds approval.

2 / 3 wire sensor monitoring.

#### Functionality

Frequency inputs

1; 0.01 Hz...35 kHz

2; 0.025 Hz...50 kHz

Binary inputs

1 for parameter selection or relay control

2 for parameter selection, commands or relay control

Parameter sets

2

4

Limits

2

4 x 6 System Limits

Analog outputs

1

2

Relays

1 change-over

4 change-over

Open collector outputs

1; isolated for frequency out

2; isolated for frequency x1, x2, x4 or status

Sensor supply

14 VDC, 35 mA

2 at 14 VDC, 35 mA

Display / status viewing

5 digit LCD T411/412 only

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Configuration

via RS232 and supplied software

via Ethernet and resident software

Voltage

10...36 VDC supply

90...264 VAC or 18..36 VDC

Special functions

-

Math function

**DUAL CHANNEL MULTI-FUNCTION TACHOMETERS**

**JAUQUET MultiTasker T600**



**JAUQUET Display D211**



**Product description**

MultiTasker with 2 frequency, 1 analogue & 2 binary inputs; 2 analogue, 4 relay and 2 open collector outputs; CAN bus and Ethernet interfaces; Event recorder and trip data-logger; for complex measurement, control, protection and communication.

5 digit display option for T600. Either direct cable connection of 1 display or connection of 1...7 displays via Bluetooth master module and Bluetooth enabled displays.

**Typical applications**

Engine + turbo speed + temperature.  
Dual turbo speed on V engines.  
2 channel turbine monitoring and protection.  
Safety critical applications.  
CAN bus communications.

Display of one or up to 7 T600 parameters

**The JAUQUET advantage**

4 parameter sets each with 6 System Limits, a logical combination of inputs / parameters e.g. speed > limit with temp < limit as indicated by analogue input. Direct PT100 connection.  
Event recorder and trip data-logger.  
Math function e.g. A/B, acceleration.  
Adaptive trigger. Fast response.  
Accuracy 0.002% for limits, 0.025% for analogue signals.  
Configuration / status viewing via resident software and Ethernet interface.  
Lloyds approval.  
2 / 3 wire sensor monitoring.

Multiple displays may be used for different parameters e.g.  
Analogue value  
Speed A / B  
Speed channel A  
Speed channel B

**Functionality**

<b>Frequency inputs</b>	2; 0.025Hz...50kHz
<b>Analog input</b>	Active or passive 0/4...20mA or PT100
<b>Binary inputs</b>	2 for parameter selection, commands or relay control
<b>Parameter sets</b>	4
<b>Limits</b>	4 x 6 System Limits
<b>Analog outputs (current / voltage)</b>	2
<b>Relays</b>	4 change-over
<b>Open collector outputs</b>	2; isolated for frequency x1, x2, x4 or status
<b>Sensor supply</b>	2 at 14 VDC, 35 mA
<b>Configuration / status viewing</b>	Via Ethernet and resident software
<b>Display</b>	D211 - 5 digit LCD (optional)
<b>Voltage</b>	90...264 VAC or 18..36 VDC
<b>Special functions</b>	Math, creep detection, direction

**About T500 /T600 System Limits**

The T500 and T600 series take tachometers to a higher level. Both feature a System Limit capability that allows the logical combination of input parameters to form an alarm or trip command.  
In the case of T500 that could be  
Speed 1 > X AND  
Speed 2 < Y AND  
Binary 1 active  
Or in the case of T600,  
Speed 1 > X AND  
Temperature via Pt100 < Y

### MULTI-CHANNEL OVERSPEED PROTECTION

### Product description

### Typical applications

### The JAQUET advantage

### Functionality

**Frequency inputs**

**Binary inputs**

**Limits**

**Relays:** alarm

2 out of 3

1 out of 3

1 out of 1

**Analog outputs / current**

**Speed re-transmit**

**On-line testing**

**Integrity monitoring**

**Configuration / status viewing**

### JAQUET FT3000 standard



Overspeed protection system, designed for SIL 3 applications. 19" rack only.

Standard 1 (STD01): 3 channel with 2 out of 3 voting; Analog card; comms card.

Standard 2 (STD02): 3 channel with 3 x 1 out of 1; Comms card.

Main turbine

Boiler feed pump

Turbine compressor monitoring and protection

Cost effective standardised systems.

10 ms trip response time.

On-line testing. Hot module exchange.

Easy configuration and status viewing via PC software.

Redundant 24 VDC power supply.

Direction discrimination.

On-line testing. Hot module exchange.

#### STD 01 / STD 02

3

4 isolated with programmable assignment

2

3 alarms per channel

STD 01: 2      STD 02: none

STD 01: none      STD 02: none

STD 01: none      STD 02: 2

STD 01: 3      STD 02: none

3

Via internal signal generators

PSU's, sensors, channel to channel

Via PC software

### JAQUET FT 3000 customized



Overspeed protection system, designed for SIL3 applications.

Multi-channel modular systems in 19" or 24" racks.

Main turbine

boiler feed pump

turbine compressor monitoring and protection.

Especially suitable for retrofit applications.

Systems matched to specific application.

10 ms trip response time.

Trip chain control card for combining trips from other sources within the SIL3 environment.

Possibility of monitoring 2 or 3 shafts in one rack.

Direction discrimination.

On-line testing. Hot module exchange.

Configuration and status viewing via PC software.

Qualified for use in nuclear applications.

Wide range of power supply options.

CSA certified.

#### System

3, 6, 9 \*

4 isolated /

2 non-isolated

36

27 \*

12 \*

12 \*

12 \*

27 \*

9

As in STD 01/02

As in STD 01/02

As in STD 01/02

#### Per channel

1

4 isolated /

2 non-isolated

4

3

4

4

4

3

1

As in STD 01/02

As in STD 01/02

As in STD 01/02

\* depending on configuration

## COMPLETE MEASUREMENT CHAIN

### JAQUET speed sensors - OEM, standard or customized



JAQUET speed sensors are designed to endure the most demanding ambient conditions and are used in a multitude of applications e.g. turbochargers, hydraulic motors, diesel and gas engines, turbines, pumps and compressors, just to name a few. Our platform approach enables us to take an appropriate sensing technology and package it in either one of our huge array of existing housings or in something matched to your specific requirements.

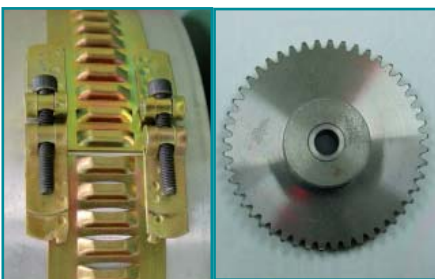
Need a high temperature helicopter turbine sensor or a railway traction control sensor that delivers tooth frequency x 16 from the first tooth? Consider it done! We are ready for the next challenge.

### JAQUET speed sensors - OEM, standard or customized



The GreenLine family is the standard line of industrial speed sensors and control modules from JAQUET TECHNOLOGY GROUP. These sensors and tachometers provide solutions for speed sensing and control applications both for end users and small OEM's. 50 plus 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).

### JAQUET pole wheels and pole bands



JAQUET pole wheels and pole bands represent the highest quality of target technology and complement the chain of speed measurement. Please refer to the pole wheels and pole bands brochure for further information.

### JAQUET Handheld tachometers



To complete our speed measurement portfolio - JAQUET also offers handheld tachometers. 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.

JAQUET HC 100 Combination Set provides each of the two mentioned above.