T600 TACHOMETER

MultiTasker - a measurement & monitoring instrument with 2 frequency and 1 analog inputs

Features

- High accuracy speed measurement: 0.002% for limits and 0.1% referenced to 20 mA
- 2 frequency + 1 analog + 2 binary inputs
- Direction and creep detection
- Temperature measurement with PT100
- 2 current, 4 relay and 2 Open Collector outputs
- Sensor monitoring for all sensor technologies
- Ethernet interface - configuration via Java™ based software
- Extensive parameter and limit setting possibilities
- Programmable logical, diagnostic and measurement functions
- Plug in terminals

The T600 Advantage

- Fast 8 ms relay reaction time on over speed
- 4 parameter sets each with 6 System Limits for almost limitless applications
- Logical limit combinations save relays & wiring
- Acceleration measurement
- Compatible with all popular sensor types

Typical Applications

- Micro turbine speed measurement and over speed protection
- Diesel engine start control and protection
- Dual turbocharger speed measurement
- Universal tachometer

2 Channel Tachometer with 4 Relays, 2 Open Collector and two 0/4-20mA Outputs:

Type and part numbers	AC version:	T601.50	Part number: 384Z-05602
	DC version:	T601.10	Part number: 384Z-05603

Technical Data

Measurement range		0.025 Hz… 50.00kHz		
Measuring time		Configurable min. measurement time (tM): 2/5/10/20/50/100/200/500 ms, 1/2/5s.		
Reaction time		Current output:	Typical tM + 4.1 ms	Maximum Input period + tM + 4.1 ms
		Relays:	Typical tM + 6 ms	Maximum Input period + tM + 4.1 ms
Accuracy		Limits / inputs	Frequency: 0.002% Current: 0.025% Temperature: 0.5 ˚C	
		Current output	0.1% referenced to 20mA or the end value Max 0.2 % from measuring value + 2 LSB (-40°…+70°C)	
Sensor inputs (2)		To measure frequency signals (speed sensors)		
	Frequency range	0.025 Hz to 50 kHz		
	Trigger levels	Selectable by software:	Fixed at 3 V or adaptive from either 20 mVrms or 180 mVrms	
	Sensor supply	+14 V ±0.5 V, max 35 mA, short circuit proof		
	Sensor monitoring	3 wire sensors:	Programmable current consumption limits of 0.5…35mA.	
		Electromagnetic sensors:	Open circuit detection	
	Analysis functions	Creep, Direction, Math (e.g. subtraction, percentage, accelaration, variance)		
Analog input (1)		To measure current or temperature Type 0...20 mA / 4...20 mA / PT100 for temperature Input impedance (passive input) 50 Ohm Resolution 12 bit corresponding to 1:4096 Analysis functions Math (e.g. acceleration, variance)		
Binary inputs (2)		Isolated inputs for binary signals		
	Levels	Low: < +5 V	High: > +15 V	(software selection of active Low or High)
	Functions	External selection of controls (parameter sets) Combination in System Limit Reset for relay, creep and memory		
Data I/O		Configuration and monitoring Ethernet interface Controlling and monitoring CAN		
Supply		AC version:	90...264 VAC max 14 W / 120...370VDC	
		DC version:	18...36 VDC max 6.8 W	
Relays (4)		To treat the status of System Limits and sensor		
	Limits	4 parameter sets each with 6 System Limits (AND / OR combined values)		
	Hysteresis	Freely programmable upper and lower set-points for each limit		
	Function	Latching / inversion (fail safe)		
	Contacts	Change-over: 230 VAC / max. 0.45 A 125 VAC / max. 1 A 30 VDC / max. 2 A		
Open collector outputs (2)		Isolated outputs of sensor frequencies: programmable x1, x2 or x4 (subject to 2 channel phase shift) Can also react on System Limits, see above		
	Function	Latching / inversion (fail safe)		
	Contacts	Umax = 36 Vdc Imax = 30 mA		
Analog outputs (2)		Isolated current output to treat information of sensor 1, 2, analog in or of the math result		
	Range	From - 99999 to + 999999 free programmable start and end value		
	Type	0...20 mA / 4...20 mA		
	Maximum load	500 Ohm corresponding to a maximum of 10 V		
	Resolution	14 bit corresponding to 1:16384 (actual resolution: 1.36 µA)		
	Maximum	linearity error 0.015 %		

Memory		To store important values
	Max/min values	Sensor 1, sensor 2, analog in
	Event memory	About 100 values of all status changes stored in either ring buffer or limited memory
	Security event memory	100 measurements before and after the security event are stored with date and time
Operating temperature		AC Version: -25°…+50°C DC Version: -40°…+70°C
Storage temperature		-40°…+85°C
Climatic immunity		In accordance with DIN 40 040
Relative humidity		75% averaged over 1 year; up to 90% for 30 days max.
Isolation		Min. 1000 V
EMC		Electrostatic discharge: IEC 61000-4-2 Electromagnetic fields: IEC 61000-4-3 Fast transients: IEC 61000-4-4 Slow transients: IEC 61000-4-5 RF common mode: IEC 61000-4-6 Magnetic fields: IEC 61000-4-8

Limits for limitless applications

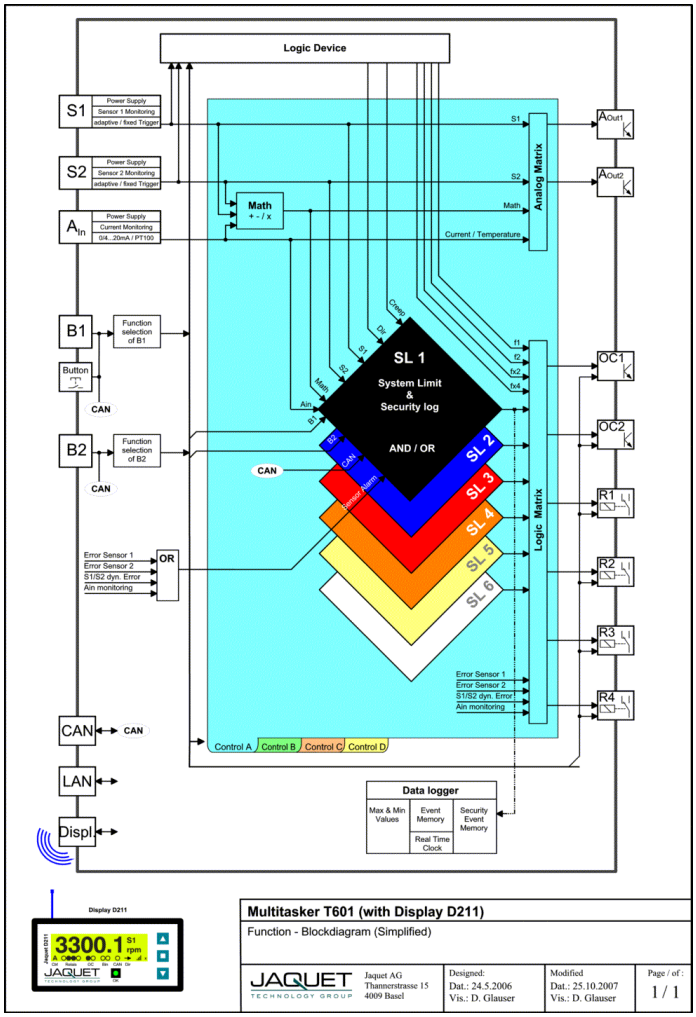
T600's allow you the freedom to choose the functions or system configuration that best match your application.

As well as being replacements for previous generation tachometers they can process multiple sensor data including frequency, 0/4…20mA analog, a directly connected PT100 temperature resistor or sensors with limit switches via binary inputs.

T600 takes T500 to a higher level. The 2 frequency inputs may either be interpreted as speed data or speed and timing signal. Logic analyses and mathematic calculations expand the possibilities.

Want to know when a trip occurred? Could you use more gear teeth than space allows? Need to swap between different parameter sets? - No problem - the T600 MultiTasker provides the solution.

Uniquely, the T600's also enables you to logically combine decision parameters from more than one sensor or command to create control signals.



Display D211 (optional)

To display measured and calculated values of the T600 Multitasker. A special mode allows you also to display the status of the binary in- and outputs. The displayed values are selected with the buttons on front panel.

A LED indicates the status of the T600.

Bluetooth® version
The communication goes over Bluetooth ®. One Bluetooth® Master D201 has to be connected to the T600. After that up to 7 displays D211.11 can be used to display independently different values of that T600 MultiTasker.

Type and part numbers
Bluetooth® version: D211.11 384Z-05730
Bluetooth® Master: D201 384Z-05731

Technical Data

Type:	5 digits LCD
Range:	-99'999…999'999
Format:	Auto range or defined dot position
Displayed values:	All input values, math values and current output values incl. unit
Displayed status:	Active control, relays, open collectors, binary inputs, CAN
Mounting:	Separate unit for front panel mounting
Dimensions:	95 x 48 x 86mm
Blue tooth:	Class 1 (100 m in open field)
Power Supply:	18…36 VDC
Cable version	The display is connected to the T600 MultiTasker by cable. Communication and power goes over this cable.
Type and part number:	
Display:	D211.10 384Z-05729
Cable 6m	304F-73740

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