

GLE/DFM-300 Digital Frequency Meter

Main Features

- Measurement of frequency, RPM, Km/h, Rad/s, %s, l/h, EU/s...
- High accuracy and reliability
- Signal processing at each incoming period
- Fast measurement response
- Analog and digital (TTL, on/off...) inputs
- Fully programmable measurement set-up
- 16 bit DAC output

Applications

- - Automotive industry
- - Power generation
- - Process control
- - Engine testing
- - Industrial monitoring
- - Research & Development ...



Overview

GLE/GLE/DFM-300 is a high precision measurement unit for low and medium frequencies and rates in engineering units.

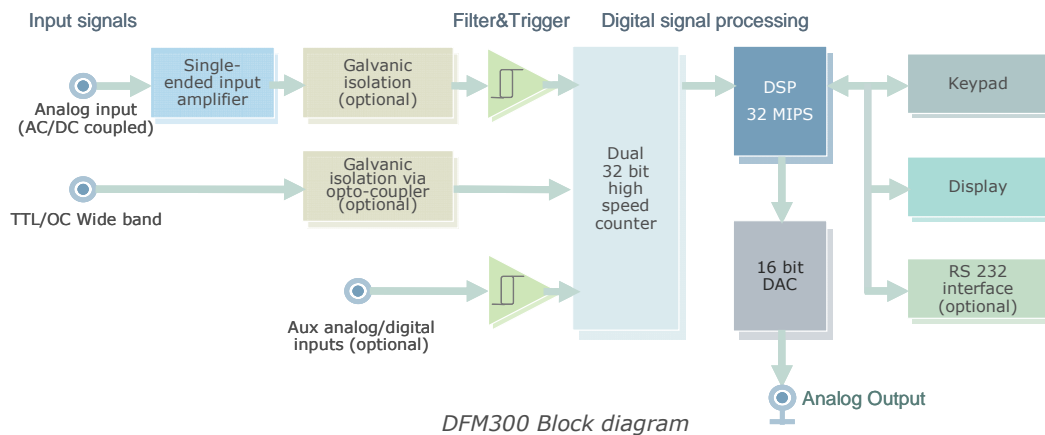
It determines frequency evaluating each period of the incoming signal and taking its inverse instead of counting pulses over a specified time interval as in conventional meters.

This method allows much greater accuracy and faster measurement update that grows proportionally to the input frequency.

For example, in order to obtain a resolution of 0.1Hz at the signal frequency of 100Hz, standard meters need to compute over 1000 periods (*that means 10s of acquisition*), while

GLE/DFM-300 achieves 0.02Hz in 10ms only.

Moreover in this way it is possible to evaluate any fast frequency fluctuations, which are necessarily averaged out in conventional meters or in analog F/V converters.



DFM300 Block diagram

GLE/GLE/DFM-300 can display frequency from 0.05Hz to 20kHz (for WB/TTL inputs the range is extended up to 1.5MHz) and thanks to the on-board 32 bit dual counter and 32 MIPS DSP, it provides an overall accuracy in excess of 0.01 % FS. The front panel key-pad and the high-contrast alphanumeric display allow to set-up various parameters like: input signal type (on/off, TTL, 50mVpp ÷ 100mVpp analog waveforms) and signal coupling (AC/DC), full-scale value, engineering unit conversion factor, trigger/

hysteresis thresholds and frequency pre-scale divider. A high-precision and low-noise signal, proportional to the input frequency, is available at the analog output (16 bit D/A conversion), enabling measurements also by means of external meters or data acquisition units. Optionally, GLE/GLE/DFM-300 can be equipped with RS 232 interface allowing data transfer to PC, while both the analog and digital inputs can be provided with galvanically isolated front-ends.

Thanks to a rugged and compact housing, a reliable electronics, a versatile and easy-to-use software, GLE/GLE/DFM-300 is an ideal instrument for a wide range of industrial and research applications, such as meter of RPMs in rotating shafts, of flow rate, of angular velocity, of ground speed of vehicles through encoders or Doppler sensors. GLE/GLE/DFM-300 requires 9 ÷ 18V DC voltage supply (extended range or AC supply are available as option).

GLE/DFM-300

Technical Specifications- GLE/DFM-300 - SE model

Input frequency range	0.05 ÷ 20000 Hz (for WB/TTL input up to 1.5 MHz)
Input frequency pre-scale (divider)	Programmable from 1 to 1000 (in step of 1)
Display coefficient	0.000001 to 600 (min step size = 0.000001)
Conversion frequency range	from 0.05 to 4000 Hz
Full scale set-up	From 20 to 4000 Hz (step size = 1).
Inputs	1) TTL/WB or ON /OFF (internal pull-up) 2) Analog single-ended 50mV _{pp} ±100 V _{pp} *
Response time	1 signal period (pre-scale = 1 and output filter off)
Computing time	< 20 µs
Analog output	0 ÷ 10 V for 0 ÷ 100 % of defined full scale value.
Output filter	Selectable LP (cut-off freq = 10Hz, xth order) or wide-band (xxHz)
Analog output accuracy (including linearity)	0.025 % FS (@ 20°C)
Analog output stability	± 50 ppm /°C
Display	High-contrast alphanumeric 12 digits dimmable red LED
Accuracy and linearity (numerical display)	0.01 % FS
Auxiliary voltage output (TTL level)	Proportional to the input frequency (downstream the trigger stage)
Signal I/O connectors	BNC
Power supply	9 ÷ 18 Vdc/5Watt (3 pins MS bayonet connector)
Operating temperature	-20 ÷ +50°C
Dimensions	54 x 150 x 165 mm
Housing	Shock-resistant plastic package with polycarbonate panels
* Selectable AC/DC coupling and programmable trigger/hysteresis thresholds	

Options

Input/Output	Note	Part # ref
1 single-ended (50mV _{pp} ±100 V _{pp}); 1 differential (20V _{pp} or 200V _{pp}) input (removable screw connectors)	1 input only can be set-on at each measure	DS
Input Galvanic isolation on differential input	For GLE/DFM300-DS model	1G
Input Galvanic isolation on digital input via optocoupler		2G
Input Galvanic isolation (analog & TTL inputs)	For GLE/DFM300-DS model	3G
4 ÷ 20 mA output	Replaces the 0 ÷ 10 V analog output	OC
Data interface		
RS 232 data interface (output)	38400 baud, 8N1. ASCII format (100ms time tag)	RS
Accessories		
AC supply 220Vac/50Hz/5VA	External adapter with tri-poles bayonet connector	DFM300/AC
Panel mount kit		DFM300/PK
<i>On request different amplifier gain and filter characteristics are available</i>		

Ordering codes

GLE/DFM300	XX	XX	XX	XX
Base model	SE	1G	OC	RS
	DS	2G	EX	
		3G		

This product is not intended for applications whose its failure to perform can be expected to cause damages to properties and/or persons and/or injury to human life. Due to continuous developments, specifications are subject to change without prior notice.

GreenLake Engineering Srl

the engineering branch of Instrumentation Devices

Via Acquanera 29 22100 COMO - Italy

ph: +39.031.521.076; fax: +39.031.507.984 - info@greenlake-eng.com

www.greenlake-eng.com