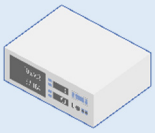
eDrive Power Analyzer Specifications & Comparison

	HBM eDrive Power Analyzer (GN310B based)	Other Power Analyzer	HBM eDrive Power Analyzer Advantages
Type	Instrument or rack mount front end	Instrument	Local or remote control with the same user interface
			
# of power channels	3 – 6 – 9 …up to 51	3 to 7	Scalable to virtually any channel count without decreasing performance
Voltage inputs	5 ranges; +/- 50 V to +/- 1500 V DC	Single or few ranges; up to 1000 V	Improved MU by better matching between selected input and actual signal
HV option	Precision diff probe up to 5 kV, or fiber isolated front ends	n/a	Safe and accurate voltage measurement to virtually any level
Current inputs	7 ranges using built-in burden resistor; +/- 75 mA to +/- 2 A	Via built-in burden resistor; single or few ranges	Improved MU by better matching between selected input and actual signal
Overvoltage categories	1000 V CAT IV	1000 V CAT II	Higher overvoltage protection
Power Accuracy DC (%reading + %range)	0.015 % 0.02 % + 2.5 mW	0.02 % 0.05 %	Need to add up these numbers after applying the actual reading
Power Accuracy 1 kHz (%reading + %range)	0.055 % 0.02 % (PF>0.5)	0.05 % 0.05 %	Need to add up these numbers after applying the actual reading & range
Power Accuracy 5 kHz (%reading + %range)	0.215 % 0.02 % (PF>0.5)	0.96 % 0.5 %	Need to add up these numbers after applying the actual reading & range
Power Accuracy 200 kHz (%reading + %range)	2.015 % 0.02 % (PF>0.5)	1.6 % 1 %	Need to add up these numbers after applying the actual reading & range
Power calculations	U, I, P, Q, S, cosφ, λ for all inputs and their fundamentals; M, n, mechanical power, Efficiency	U, I, P, Q, S, cosφ, λ for all inputs and their fundamentals; M, n, mechanical power, Efficiency	
Advanced calculations	THD, Harmonics, Phazors…..	THD, Harmonics, Phazors…..	
eDrive analysis	Space vectors, dq0 transform, motor mapping, torque ripple, BackEMF….	n/a	Advanced analysis features to calibrate and/or to optimize drives
Sample rate	2 MS/s up to 250 MS/s option	200 kS/s to 10 MS/s	HighSpeed Scope card with 25 or 100 or 250 MS/s can be added
Resolution	18 bit	18 bit	
Bandwidth	1 MHz up to 50 MHz option	5 MHz	
Torque and speed inputs	up to 6; more as option	1 or 2	Test multi machine setups with one system
Mechanical analysis	M, n, P_mech and instantaneous M and n (torque ripple, torsional vibration)	M, n, P_mech only	Find and analyse mechanical issues in the test setup and the test specimen
Bus inputs	CAN 2.0 / CAN FD	n/a	Record command signals and response simultaneously
Bus outputs	CAN 2.0 / CAN FD and EtherCAT	Very limited	Feedback real time results into the control system
Usability	Windows based yet instrument type	Instrument type	Easy to learn; linked to Windows PC enabling Multi Monitoring or Office reporting
Raw data storage	Real time full sample rate to SSD, no file size limit	Buffer and download, very slow, limited file size	No limit in raw data storage no waiting times, no file size limits
Result update rate	Per half cycle, up to 2000 / s	Averaged over time, up to 20 / s	Computation as fast as possible
Dynamic power calculation	Yes, due to calculation per half cycle	No, due to averaging and analogue PLL	Insights into run up/down tests and step response
API programmers' interface	Yes, extensive	Limited	Easy and modern system integration using C++ and C#; LabView driver
Other inputs	Accelerometer, temperatures, ….	n/a	Reduce test complexity by acquiring all data with one system
Post process analysis and result verification	Unlimited using stored raw data and analysis software	n/a	Verify your results and perform analysis