

DEWE-Crankangle-CPU

- Universal clock conditioner for angle based data acquisition, especially suited for combustion analyzer applications
- Isolated input for crank angle (CA) or encoder sensors
- Quadrature encoder input supports X1, X2 and X4 modes
- CA input is free programmable - number of teeth and holes (i.e. 60-2 encoder)
- CA input supports pickup sensors or TTL signals
- Absolute long time stable



The DEWE-CRANKANGLE-CPU offers a universal clock multiplier suited especially for combustion analyzer applications where angle synchronous data acquisition is needed. A wide range of angle sensors is supported:

- Quadrature encoder (X1, X2 or X4)
- Pulses + trigger (CDM)
- Car's built-in crank-angle sensor with up to 3 gaps; e.g. 60-2-2-2
- Car's built-in crank-angle sensor with double teeth ; e.g. 36+1

In-car crank angle sensors, such as 60-2, deliver a non-equidistant pulse signal because a few pulses per revolution are missing to get information about the absolute crank shaft position. To make such sensor signal useful for e.g. combustion analyzer application, the gaps have to be filled up and the angle resolution must be increased to get accurate angle position information. There is a free definable clock multiplier from 1 to 100 to reach sufficient angle resolution.

A clock divider and auxiliary I/O signals for customized controlling are included as well. Programming is done via RS-232 or RS-485 interface.

An optional level converter CA-CPU-ADAP-LVDS-RS422 is available to convert LVDS / RS422 to TTL level. This enables connection of crank angle sensors with LVDS (e.g. AVL 365C, Kistler 2614A) or RS422 output to the DEWE-CRANKANGLE-CPU.

DEWE-CRANKANGLE-CPU	
Input sources	
Quadrature encoder	
Modes	X1, X2 and X4
Signal level	TTL, protected to 25 Volt
Edge sensitivity	rising or falling
Maximum input frequency	1 MHz
CDM Sensor	
Signal level	TTL, protected to 25 Volt
Edge sensitivity	rising, falling or both
Maximum input frequency	1 MHz
In car CA sensor	
Sensor types	Inductive or hall effect (TTL)
Input voltage, inductive	up to ± 80 Volt
Switching levels	0.5 or 2 Volt
Supported sensor types	Free programmable
Number of „holes“	1, 2 or 3
Number of teeth between holes	3 to 127
Maximum input frequency	100 kHz
Clock multiplier / divider	
Programmable factor	1 to 100 or bypass
Programmable divider	1 to 100
Output signals	
Maximum output frequency	1 MHz
Output level	TTL/CMOS
Maximum current	50 mA
System specification	
Programming interface	R-S232 or RS-485
Supply voltage	9 to 15 V
Power requirements	1 W, without sensor power
Maximum sensor supply	5 W @ 5 Volt, 2 W @ ± 15 Volt
Dimensions	165 x 115 x 50 mm (6.5 x 4.5 x 2 in.)
Weight	740 g (1.63 lbs)
Environmental	
Operating temperature	0 °C to 60 °C (standard)
Storage temperature	-20 °C to +70 °C
Humidity (operating)	10 % to 80 %, non condensing 5 % to 95 %, rel. humidity
Vibration	
Operating test temperature	MIL-STD 810F 514.5 procedure I
Frequency range	5 to 200 to 5 Hz; 5 x 12 min each direction
Displacement amplitude	±3.5 mm (5 to 8.45 Hz)
Acceleration amplitude	1 g (8.45 to 92 Hz)
Displacement amplitude	92 to 113 Hz: ±0.029 mm
Acceleration amplitude	1.5 g (113 to 200 Hz)
Shock	
non operating test procedure	MIL-STD 810F 516.5 procedure I ½ sinus 11 ms 10 g 3 shocks positive, 3 shocks negative