Waveform Display V Series Force Measuring Amplifier

MODEL-1016C

The MODEL-1016C is a digital force measuring amplifier with an LCD touch panel. Various measuring conditions are set by touching the LCD panel. The MODEL-1016C has four-quadrant operations necessary for reciprocal measurement without the need of any CF cards, in principle. It features remarkably improved graph processing speed and as high communication rate as 230.4 kbps. This amplifier stores all measured data digitally and allows the user to reproduce data displayed on the screen as many times as needed during measurement and after measurement. It requires, however, an exclusive CF card for switch feeling tests, separation tests and creep tests.
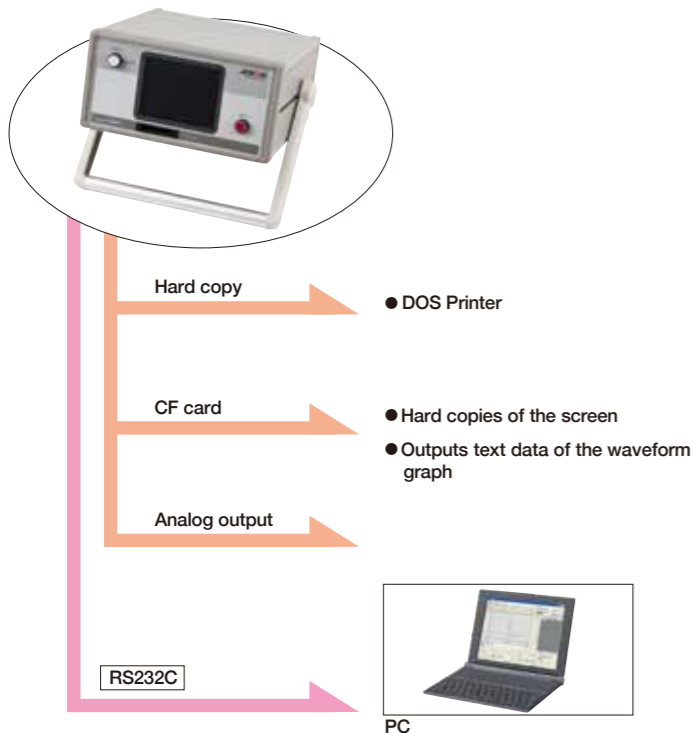
Features

● LCD touch panel
● Capable of force - displacement measurement and torque - angle measurement.
● Offers four-quadrant operations necessary for reciprocal measurement.
● Features as high communication rate as 230.4 kbps.
● Able to calibrate the loads of a maximum of ten load cells.
● Able to read the force and displacement at any points with the cursor.
● Able to change the scales of the force and displacement graphs during measurement.
● Compact size for space saving
● Save the data to the CF card. (.CSV)

CF Card Types

● V-103A
   For switch feeling tests
   Capable of setting the point - displacement test conditions, masking function and end stroke.
● V-108A
   For separation tests
● V-115A
   Force holding creep tests
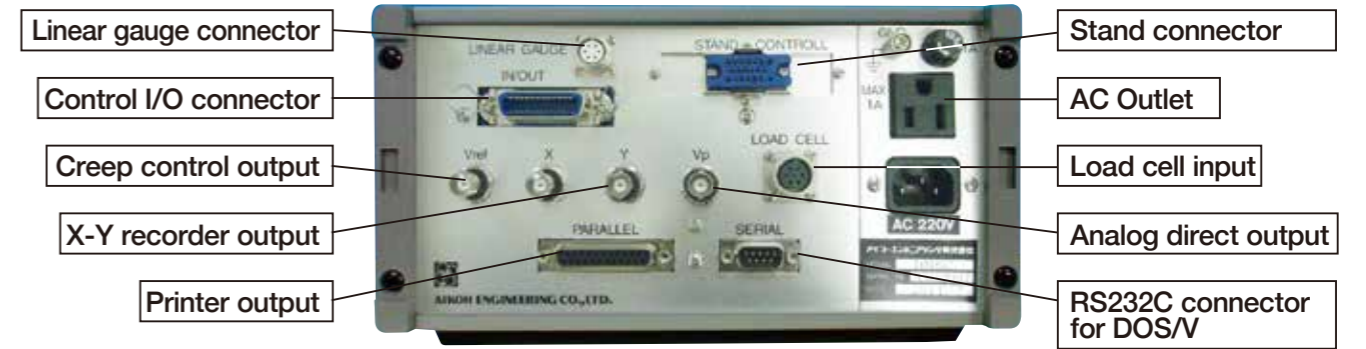   Force - displacement, and force - time

Connection with PC & Recorders

Hard copy → ● DOS Printer

CF card → ● Hard copies of the screen
        ● Outputs text data of the waveform graph

Analog output

RS232C

PC

Load Cells & Force Display

Capacity	Display	Min. unit
5N (500g)	±5000mN	1mN
20N (2kg)	±20.00N	0.01N
50N (5kg)	±50.00N	0.01N
200N (20kg)	±200.0N	0.1N
500N (50kg)	±500.0N	0.1N
2KN (200kg)	±2.000KN	1N
5KN (500kg)	±5.000KN	1N
10KN (1ton)	±10.00KN	0.01 KN
20KN (2ton)	±20.00KN	0.01KN
50KN (5ton)	±50.00KN	0.01 KN
100KN (10ton)	± 100.0KN	0.1KN

Torque Meters & Torque Display

Capacity	Display	Min.unit
0.2N·m (2kgf・cm)	200.0mN・m	0.1mN・m
0.5N·m (5kgf・cm)	500.0mN・m	0.1mN・m
2N·m (20kgf・cm)	2.000N・m	0.001N・m
5N·m (50kgf・cm)	5.000N・m	0.001N・m
20N·m (200kgf・cm)	20.00N・m	0.01N・m
50N·m (500kgf・cm)	50.00N・m	0.01N・m
200N·m (20kgf・m)	200.0N・m	0.1N・m
500N·m (50kgf・m)	500.0N・m	0.1N・m

Linear gauge connector
Control I/O connector
Creep control output
X-Y recorder output
Printer output
Stand connector
AC Outlet
Load cell input
Analog direct output
RS232C connector for DOS/V

Specifications of MODEL-1016C

Names	Performances & Specs.	
Load cell input	Input channel: 1 Calibration points: 10	
Load cell amplifier	Load cell application voltage: 12/6/3 Vdc (110 mA max., 350Ω x 3) Voltage variation: 100 ppm/℃ max. Input voltage range: BV = 12V, 0.1 mV/V to 2 mV/V BV = 6V, 0.2 mV/V to 4 mV/V BV = 3V, 0.4 mV/V to 8 mV/V Accuracy non-linearity: 0.01 % max. Zero point movement: 1 μV/℃ RTI max. Gain variation: 100 ppm/℃ max. Low-pass filter frequency: 1, 3, 10, 30, 100, 300, 1k	
A/D converter	Resolution: 16 bits, sequential proportional type Sampling frequency: 1000 times/sec. (1 ms)	
Length measurement counter for rotary encoder & linear gauge	Phase A/B up/down counter x 2 channels Resolution: 24 bits	
Proportional voltage output (Vp)	±10V, load resistance: 10kΩ or more Output for monitoring load cell conditions	
Voltage output for recorder(X.Y)	±10V, load resistance: 10kΩ or more x 2 channels (X- & Y-axes) D/A converter Resolution: 12 bits Updating frequency: 1000 times/sec. (1ms)	
Control voltage output (Vref)	±10V, load resistance: 10kΩ or more D/A converter Resolution: 12 bits	
Control contact I/O	Inputs: 8 Outputs: 8 (relay contacts)	
Stand control output	STOP, UP, DOWN & QUICK	
Digital I/O	Centronics-compatible parallel port for connecting a printer Start-stop synchronous serial port for connecting a PC Baud rate: 4.8 k, 9.6 k, 19.2 k, 38.4 k, 115.2 k, & 230.4 k (bps)	
Display	STN type black-and-white LCD panel, 320 dots x 240 dots Effective display area: 96 x 72 mm	
Operation panel	10 X 6 touch panel	
Source voltage	100 VAC ±10 % / 220 VAC ±10 % AC outlet (unswitched)	
Power consumption	30 VA	
Outside dimensions	W260 x H132.5 x D280 mm	
Weight	Approx.5.2kg	

CF card for Storing Important Data

V-103A
   For switch feeling tests
V-108A
   For separation tests
V-115A
   For force holding creep tests