# ALPHA-D

DESCRIPTION

The ALPHA-D model is a digital multifunction instrument with two configurable inputs for connection to a wide variety of sensors an pulse generators, capable of making the functions of:

- COUNTER WITH MEMORY
- Batch counter, UP counter, DOWN counter and bi-directional (UP/DOWN) counter.
- CHRONOMETER / TIMER WITH MEMORY
- FREQUENCYMETER / TACHOMETER

For mesurement of frequency, rpm, velocity, flow, time.
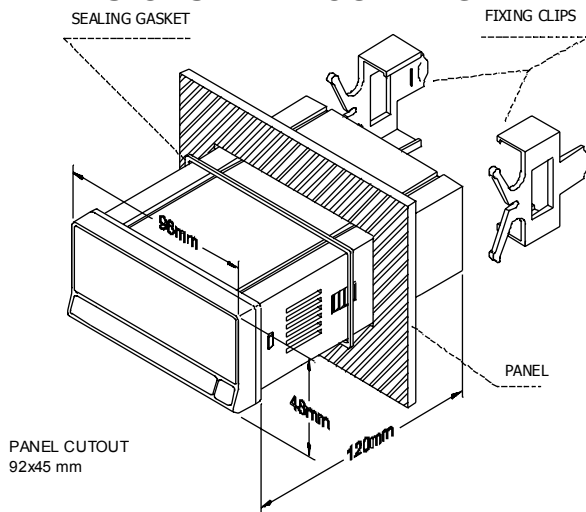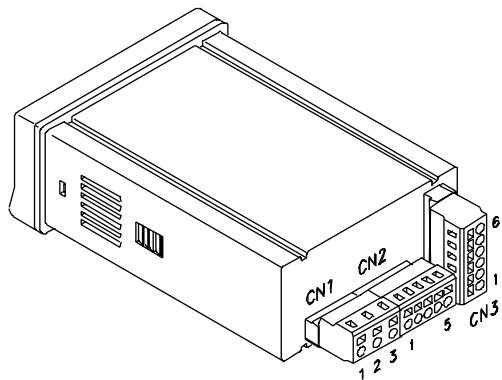

STRUCTURE
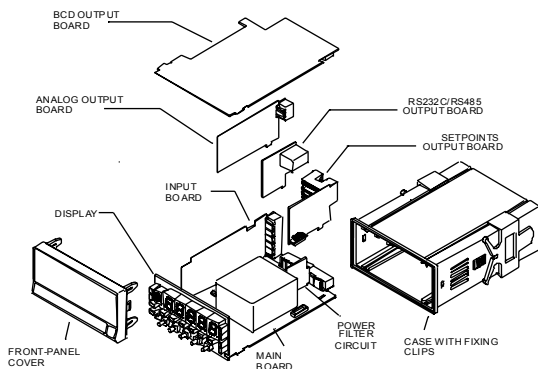
STANDARD

- Panel-mounting 1/8 DIN case, depth 120 mm
- Electronics assembly :
    - Main board.
    - Input card.
    - Keyboard and display module.
- Fixing clips for panel mounting.
- Frontal sealing gasket.
- Plug-in terminal block connectors.

DIMENSIONS AND MOUNTING

PANEL CUTOUT
92x45 mm

CONNECTIONS

CN1	POWER SUPPLY	
PIN	AC VERSION	DC VERSION
1	AC PHASE	DC POSITIVE
2	GND (GROUND)	-
3	AC NEUTRAL	DC NEGATIVE
CN2	INPUT SIGNAL	
1	RESET	
2	HOLD	
3	COMMON	
4	OFFSET	
5	PEAK / VALLEY	
CN3	INPUT SIGNAL	
1	INPUT (10-600V)	
2	POSITIVE INPUT A	
3	POSITIVE INPUT B	
4	NEGATIVE INPUT	
5	+EXCITATION 8V	
6	+EXCITATION 24V	

ALPHA-D

OPTIONS

The ALPHA model can accept a variety of output options which are installed in the meter's main assembly by means of plug-in connectors:

- 2 SPDT Relays rating 8A @ 250V AC / 150V DC
Ref...**2RE**
- 4 SPST Relays rating 0.2A @ 250V AC / 50V DC
Ref...**4RE**
- 4 NPN Outputs rating 0.5A @ 10-40V DC
Ref...**4OP**
- 4 PNP Outputs rating 0.5A @ 10-40V DC
Ref...**4OPP**
- RS232C communication output, 1200 to 19200 baud
Ref...**RS2**
- RS485 communication output, 1200 to 19200 baud
Ref...**RS4**

Serial communication protocols: standard, ISO1745, Modbus

- Isolated analog output 0-10V / 4-20mA
Ref...**ANA**
- BCD parallel outputs with TTL/24V DC logic
Ref...**BCD**

KEYBOARD FUNCTIONS

OFFSET
Each time this key is depressed, the current display value is loaded into the offset memory. The LED "OFFSET" illuminates to indicate the operation is done. To reset the offset memory, press the OFFSET key and, while holding it down, press also "RESET". Release first "RESET" then "OFFSET" and the reset. This function can be locked out via software.

RESET
The "RESET" key is used to initialize the counter sequence bringing back the meter to the offset value. There are two types of reset via keyboard ; MOMENTARY, which operates on presssing the "RESET" key and MAINTAINED, which stops the counter when pressing and resets when releasing the "RESET" key. This function can be locked out via software.

MAX/MIN (BATCH)
The "MAX/MIN" key can only be used when the instrument is configured as a BATCH counter. This key allows changing the count value being displayed (normal count or batch count). The auxiliary display shows "L" when counter is set for viewing the batch count and blanks when viewing normal count.

LIMIT
During the run mode, this key is only operative in case that the instrument incorporates one of the following output options: 2 RELAYS, 4 RELAYS or 4 NPN TRANSISTORS.
By pressing and releasing sequentially the "LIMIT" key, the display reads the programmed setpoint values. Each setpoint is presented on display with activation of its corresponding LED 1, 2, 3 or 4. The LED "LIMIT" remains activated during this sequence. If the setpoint option is of 2 RELAYS, only the setpoints 1 and 2 appear on the display.
The setpoint values are shown sequentially at each press of the "LIMIT" key, independently of whether they are enabled or inhibited. A new press of "LIMIT" from the indication of the last setpoint returns the meter to the normal reading.

FRONT-PANEL FUNCTIONS
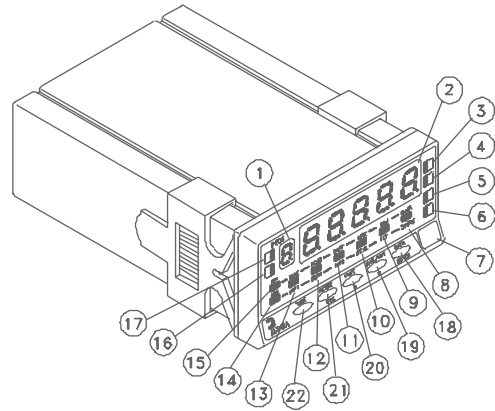
MODE		RUN	PROG
Auxiliary Display	1	*	Displays programming module
Main Display	2	Displays the input variable	Displays programming
LED 1	3	Relay1 / Opto1 status	-
LED2	4	Relay2 / Opto2 status	-
LED 3	5	Relay3 / Opto3 status	-
LED 4	6	Relay4 / Opto4 status	-
Label	7	Measurement unit	
LED DATA	8	-	Indicates data memory storage
LED MIN	9	Indicates display of a valley value	*
LED MAX	10	Indicates display of a peak value	*
LED LIMIT	11	Indicates display of setpoint value	*
LED HOLD	12	Indicates display hold	*
LED OFFSET	13	Indicates offset in the memory	*
LED PROG	14	-	Indcates programming mode
LED RUN	15	Indicates run mode	-
LED B	16	-	Indcates programming of the
LED A	17	-	Indcates programming of the
ENTER key	18	Enters in PROG mode. Displays data	Accepts data. Advances programm
MAX/MIN key	19	Calls up peak and valley values*	Moves to right
LIMIT key	20	Calls up the setpoint values	Increments the value of the flashing digit
RESET key	21	Reset the display to offset	ESCAPE function
OFFSET key	22	Offset has a vallue different from the	-

* Function depending on configuration

ALPHA-D

INPUT SIGNAL
- Frequency max...… 25KHz
- Frequency min…..0.05Hz
- Max. count rate

Batch 10KHz
UP or DOWN 10KHz
Bi-directional 10KHz
- Sensor excitation .... 8V/ 24V @ 30mA

DEBOUNCE FILTER (Counter/ Chrono Optional)
- Fc…... 20Hz
- Pulse widt min 30ms

MAGNETIC PICKUP
- Sensitivity…...........................Vin (AC) >120mVeff

NAMUR SENSOR
- Rc…...1KΩ
- Ion….. < 1mA DC
- Ioff .... > 3mA DC

TTL/24V DC (ENCODER)
- Logic levels.............."0" < 2.4V DC, "1" > 2.6V DC

NPN / PNP TYPE SENSORS
- Rc…..1KΩ (incorporated)
- Logic levels.............."0" < 2.4V DC, "1" > 2.6V DC

CONTACT CLOSURE
- Vc…...5V
- Rc…...3.9KΩ
- Fc….. 20Hz

HIGH VOLTAGE INPUT
- Input range ....10V to 600V

MEMORY
No volatile E2PROM save all programming data necessary to run the meter in the desired conditions and the last count (counter and chronometer) displayed before power down.

POWER SUPPLY
- AC Voltages............. 115V/230V 50/60Hz (± 10%)
- DC Voltages......................................10-30V DC
- Power consumption 5W without options, 10W max

ACCURACY
- Temperature coefficient 100ppm/ºC
- Warp up time .... 5 min

FUSES (DIN 41661) (Recommended)
- ALPHA-D (115/230V AC)...................F 0.2A /250V
- ALPHA-D1 (10-30V DC).......................F 2A/ 250V
- ALPHA-D2 (24/48V AC)...................F 0.5A/ 250V

DISPLAY
- Main............................. 14 mm five digits red LED
- Auxiliary ....10 mm one digit green LED
- LEDs .... 14 programming and status indication
- Decimal point…...............programmable 5 positions
- Sign ....(bi-directionnal counting) automatic
- Positive overrange indication ....OvEr
- Negative overrange indication.....................UndEr
- Counter range0 to 99999 (-99999 to 99999 UP/DO.)
- Chronometer ranges ....5, from 999.99s to 9999.9h
- Frecuencymeter range........................... 0 to 25000
- Tachometer range ....0 to 99999(rpm), programmable(rate)
- Multiplier factor programmable from 0.0001 to 9999
- Reading rate

Chronometer:...... 10ms (999.99s), 0.1s (other scales)
Counter: 10ms
*Frequency & tachometer:*programmable from 0.1 to 9.9s

ENVIRONMENTAL
- Operating temperature .... -10ºC to 60ºC (0 ºC to 50 ºC) s/UL
- Storage temperature .... -25 ºC to 80 ºC
- Relative humidity ....<95% at 40 ºC
- Max. Altitude 2000m

MECHANICAL
- Dimensions............... 1/8 DIN case, depth 120 mm
- Weight 600g
- Case material....................UL 94 V-0 polycarbonate
- Sealed front panel.......................IP65 (indoor use)

ORDERING REFERENCES
- 115/230V AC 50/60Hz powered...............ALPHA-D
- 10-30V DC powered..............................ALPHA-D1
- 24/48V AC 50/60Hz powered ALPHA-D2