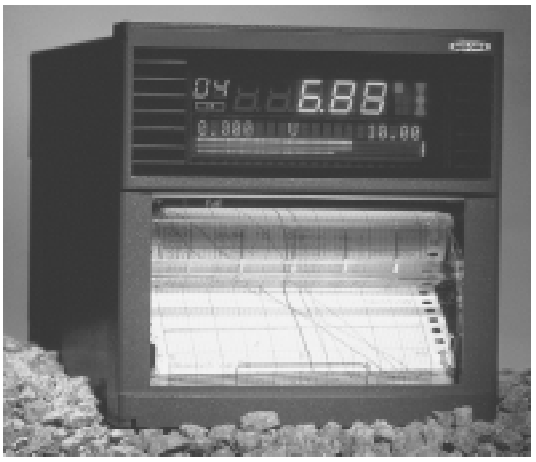
Moore 36M Multi-Point Recorder

FEATURES & BENEFITS

- High resolution, four-color vacuum fluorescent display (VFD) provides information with exceptional color and clarity
- Six-color fiber tip dotting system delivers clear tracing
- Two, three, or six universal inputs, up to 6 contact event inputs, up to 12 relay outputs, and up to 4 analog outputs provide real flexibility
- Easy front panel configuration simplifies start-up
- PCMCIA memory card drive affords convenient data storage
- Die-cast door and steel case ensure operation in harsh industrial environments
- Requires only 9.29" (236 mm) depth behind the panel



DESCRIPTION

The Moore 36M Strip Chart Recorder displays information on a high resolution, four-color VFD, and delivers clear traces with a six-color fiber tip dotting system. Front panel configuration allows easy set-up, and a variety of input, output, and performance options provide extensive system flexibility. Moreover, its rugged steel case and die cast door are designed to meet the rigors of industrial environments.

The four-color VFD creates exceptional color, vividly displaying five 12 mm characters for process value, twenty 4 mm characters for text and three 1 mm bargraphs. The display also shows the measured value of each channel with its associated descriptor or scale, as well as bargraph indication of the three channels' values. Information is recorded in distinctive colors on the chart using six different fiber tip pens.

Inputs are fully universal with V, mV, TC, RTD and contact inputs. Recorder inputs can also be used as contact inputs to trigger internal recorder actions. A dedicated six contact event input card and up to 12 relay outputs are also available. Up to four channels can be retransmitted as linearized currents or voltage signals to other instruments.

The 36M is fully configurable from the front panel using local push buttons and text prompts. This allows direct access to operator changes, and access to password protected configurations.

Data stored on a Type I PCMCIA data card may be formulated for analysis, presentation, storage, and archiving using standard spreadsheet packages. Stored data can include the recorder's configuration that can be saved to the data card for archiving or to transfer it to another recorder.

A variety of math, timer, totalizer, and counter functions offer full integrating and counting capabilities. These options make it possible to carry out even the most complex application-specific function, such as environmental parameter monitoring or gas flow compensation.

The Moore 36M Multi-Point Recorder supports MODBUS® communications to ensure communication with other devices.

SPECIFICATIONS

ELECTRICAL

Power Requirements
Line Power: 45 to 65 Hz; 90 to 264 Vac
DC Power: 24/48 Vdc
Consumption (max): 100 VA, 100W
Fuse Type: None
Interrupt Protection: 40 msec @ 75% instrument load

ENVIRONMENTAL

Temperature Limits
Operating: 0 to 50°C
Storage: -20 to +70°C

Humidity Limits
Operation: 5% to 80% RH (non-condensing)
Storage: 5% to 90% RH (non-condensing)

Protection
Door and Bezel: IP54 (similar to NEMA 3)
Case Sleeve: IP31 (similar to NEMA 1)
Shock/Vibration: IEC348, IEC873 recovers from 2G peak @ 10Hz to 150Hz

EMC
Electromagnetic Emissions: EN50081-2
Safety: To EN61010;Installation II; Pollution Category 2
Static: IEC801-2 level 4 to 15KV(air discharge, panel mounted, open door)
Fast Transients: IEC801-3 (instrument within specification)
IEC801-4 (automatic recovery from any error/ malfunctions)
R.F. Immunity: IEC801-3 to 10V/m (level 3)
± 1% on 0 to 100°C

PROPERTIES

Printing System
Pen Type: 6 nib cartridge
Pen Resolution: 0.2 mm
Pen Colors: Ch. 1: violet; Ch. 2: red; Ch. 3: black; Ch. 4: green; Ch. 5: blue; Ch. 6: brown
Pen Life: 1.5 x 10^6 dots per color
Update Rate: 2 Hz
Response Time: 1 pass every 1.5 seconds

Paper Transport
Type: Stepper motor driving sprocket tube
Chart Speeds: 0 to 1,200 mm/hr (user selectable)
Chart Type: 100 mm calibrated width, 16 meter Z-fold
Input to Paper Accuracy: 0.5% of span

Data Storage Format
PCMCIA data card (Type I)

Memory Configuration
EEPROM

Custom Linearization
1 table of 32 point pairs

GENERAL PARAMETERS

Inputs
Maximum Number: 2, 3, or 6 inputs
Types
Thermocouple: B, C, D, E, G2, J, K, L, N, R, S, T, U, Ni/NiMo, Platinel II
RTD: 2/3-wire resistance temperature detector (not channel 1 if any other channel is a thermo-couple input); Pt100, Pt1000, Ni100, Ni1000
Vdc: 38mV; 150mV; 1V; 10V dc milliamps (mA): External shunt required
Ohms (Ω): 0 to 150Ω, 0 to 600Ω, 0 to 6KΩ
Contact Closure: Not channel 1
Minimum: 250 msec
Type Mix: Freely configurable

Noise Rejection
Common mode: >140dB (48 to 62 Hz ch to ch and ch to gr)
Series mode: >60dB

Maximum Comm. Mode
250V continuous

Maximum Series Mode
45mV @ lowest range; 12V peak @ highest range

Isolation
300V RMS (dc to 65Hz; EN61010)
(or dc ch to ch and ch to gr)

Dielectric Strength
1350 Vac for 1 min (ch to gr)
2300 Vac for 1 min (ch to ch)

Insulation Resistance
>10MΩ @ 500Vdc

Input Impedance
38mV, 150mV, 1V range: >10MΩ
10V range: 68.8KΩ

Overload Protection
50V peak

Open Circuit Detection
± 57 nA maximum
Recognition Time: 500 msec
Minimum Break Resistance: 10MΩ

Physical
Panel (Bezel) Size: 5.7" x 5.7" (144 mm x 144 mm)
Panel Cutout: 5.4" x 5.4" (138 mm x 138 mm)
Depth Behind Panel: 9.29"/236 mm with terminal cover
Panel Mounting: DIN43700; Vertical ± 30°
Weight: 7.75 lbs. (3.5 kg)

OPTIONS

Communications
RS422/RS485 Gould Modicon MODBUS® RTU

Math Pack
Number of Derived Channels: 16 configurable
Basic Functions: Off, const., add, subtract, multiply, divide, modulus
Advanced Functions: (Includes Basic)
Sq rt, ch avg, DV group avg, rolling avg, e^x, 10^x, in, $\log_{10}$, rate-of-change, sample and hold, ch min, DV group latch min, DV group cont min, ch max, DV group latch max, DV group cont max, 3rd order polynominal, $F_\circ$, relative humidity, mass flow: linear; mass flow: sq rt; ZrO_2 probe, high select, low select, switch, stopwatch, timestamp, O_2 correction, percentile

Event Input Board
Maximum Number Inputs: 6 discrete contact closures or 16 coded (using binary codes on inputs 1-4, strobed @ input 5)

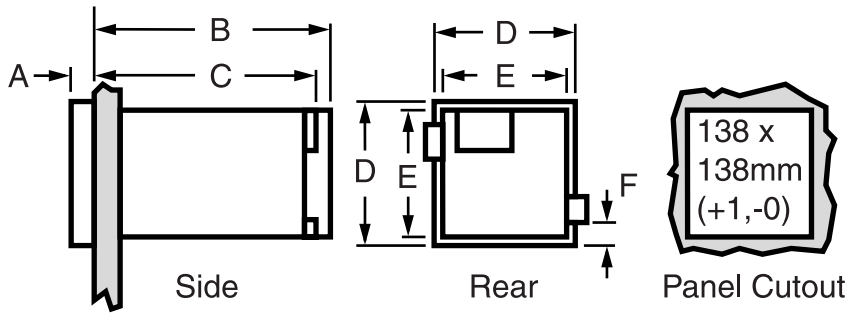
Outputs
Relay Outputs: Up to 12
Ratings for Resistive Loads
(derate for inductive loads)
Switching Voltage: 250Vac, 30Vdc
Switching Power: 500VA, 60Ω
Break Current: 2A within referenced voltage & power limits
Retransmission Outputs
Configurable Output Ranges: 0-20mA; 4-20mA; 1-5 V; 0-10V

Transmitter Power Supply
Outputs: 6 isolated 24Vdc
Current: 20mA each output
Permissible Load: 600Ω maximum

ACCESSORIES

Part number	Description
4LA249556	36M Multipoint Printhead
GD201125	36P,M Chart, 50 line, Z-fold
GD204080U050	36P,M Chart, 50 line, Roll
IF247152U102	36P,M—128K SRAM Card
IF247152U104	36P,M—512K SRAM Card
IF247152U106	36P,M—2 Meg SRAM Card
IF247152U107	36P,M—4 Meg SRAM Card
LA207028U004	(4)-250 ohm shunts for 36V/P/M
LA207028U006	(6)-250 ohm shunts for 36V/P/M

INSTALLATION DRAWINGS



	A	B	C	D	E	F
inch	1.06	9.29	8.66	5.67	5.39	1.38
mm	27	236(with cover)	220(w/o cover)	144	137	35

MODEL NUMBER

36M **Chart Paper Recorder with Chart Annotation**

Power
- 1 90-264Vac (Set for 120 Vac)
- 2 24/28 Vdc
- 3 90-264 Vac (Set for 220/240 Vac)

Pens
- 1 2 Isolated Universal Input Channels
- 2 3 Isolated Universal Input Channels
- 3 6 Isolated Universal Input Channels

Chart Type and PCMCIA Drive Type
- 1 Z-fold and No Drive
- 2 Z-fold and Packed Data Storage Drive
- 3 Roll and No Drive
- 4 Roll and Packed Data Storage Drive

Option Slot #1
- N None
- 1 Relays-4NC
- 2 Relays-4NO
- 3 Relays-3 Form C
- 4 Retransmission-2 Outputs
- 5 Event Contacts-6 Inputs

Option Slot #2
- N None
- 1 Relays-4NC
- 2 Relays-4NO
- 3 Relays-3 Form C
- 4 Retransmission-2 Outputs

Option Slot #3
- N None
- 1 Relays-4NC
- 2 Relays-4NO
- 3 Relays-3 Form C

Transmitter Supply (not available with 24 Vdc Operating Voltage Option)
- N No Supply
- 1 3 Channel Supply
- 2 6 Channel Supply

Math
- 1 Basic Math
- 2 Advanced
- 3 Advanced + 32pt Characterizer
- 4 Advanced + 20 Messages
- 5 Advanced + 32pt Characterizer + 20 Messages

Advanced Functions
- N None
- 1 2 Totalizers
- 2 4 Totalizers
- 3 6 Totalizers
- 4 6 each Timers, Counters
- 5 6 each Timers, Counters, Totalizers

Communications
- N None
- A RS 485 Modbus

Reserved for Factory Use
- N

Certifications
- 1 CE
- 2 CE and CSA

36M 1 2 1 N N N N 1 N N N 1 ***Sample Model Number***