Technical
Information
TI 002R/24/ae

Hybrid Recorder Series
mega-log t/tl/tn/tp

A family of hybrid color recorders for documenting 1 to 6 analog inputs on a 120 mm chart

Applications

Mega-Log recorders are used to monitor processes where it is important to quickly view trends, event messages, and reports

- document inflow/outflow quantities in supply pipelines
- count quantity on production lines
- record energy distribution
- record temperature in sensitive manufacturing processes
- record product quantities in batching applications
- present process-relevant information in a very clear and concise manner

Features

- easy to read fluorescent display for digital and bar graph display presentation of measured values
- one six-channel recorder can replace two standard line chart recorders
- patented overwrite technology combines the advantages of color recording with the reliability of the linear array thermal principle
- universal connection of most frequently used analog and digital signals
- system compatible via serial interface
- comprehensive text information displayed and printed on the chart

Endress+Hauser

Nothing beats know-how

Models

Mega-Log Recorders at a Glance

Type	Number of Channels	Recording Style	Recording Principle
Mega-Log t	1...6	Continuous line chart recording	Linear array thermal print head
Mega-Log tl	1, 2, or 3	Continuous line chart recording	Thermal print head for safety-line. Overwrite technology using felt tip pens
Mega-Log tn	2, 3, or 6	Continuous line chart recording	Thermal print head for safety-line. Overwrite technology using pen wheel
Mega-Log tp	6	Dotting recorder	Thermal print head for dot to dot connecting line. Overwrite technology using pen wheel.

Features Mega-Log t/tl/tn/tp

Linear Array Thermal Print Head

The high resolution (8 dots/mm) fully maintenance-free linear array thermal print head makes sure of the following even without ink:

- Reliable recording using "Safety line"
- High resolution text printouts
- Individual grids and scale printout for each channel
- Recording only the most important section of the signal range ("Zoom") and recording this on a preselectable section of the chart ("Zoning")
- Always operational in real time, even on varying paper feed rates, due to date and time printout.

Patented "Overwrite Technology"

Mega-Log recorders are designed to guarantee accurate and reliable recording. Overwrite technology combines all the advantages of color recording with those of the linear array thermal principle.

All channels are burnt into the paper simultaneously, without time offset, as a single color (black) trace. These lines are then traced in color using easily exchanged pens or a pen wheel. The unit can be set up to trace continuously or only in the case of a limit infringement.

Display

The 2 x 20 digit fluorescent display is integrated into the recorder door. The advantages are:

- Operation even with a locked door (changes to the set up can only be done by using a security code)
- Measured values are displayed as digital or analog values (trend bar graph)

Roll Chart or Z-Fold Paper

The Mega-Log series recorder operates with either roll or Z-fold paper. You have the choice:

- Roll chart paper for long term recording
- Z-fold paper for a fast look

Limit Monitoring

Five individual presettable limits per channel initiate, on request, an event printout, activate relays, or preset the paper feed rate to your chart requirement.

Built-in Timer

Program the times your recorder needs to be operational.

- Optimize paper usage
- You have a quick overview of process data because unimportant data is not recorded

Variable Analog Inputs

Each channel can be set to its individual input signal. All inputs are galvanically isolated from each other as well as the system, and can be calibrated by push buttons. All channels are measured very quickly (10 times per second).

Select the correct amplifier board:

Standard input board for economic measurement of current (0...1/10 V; 0/4...20 mA)

Universal input board (optional) for selectable measurement of the most frequently used types of analog signals (± mV/V/mA, RTDs, thermocouples; of course current and voltage measurement as the standard input board).

Automatic Signal Analysis

Your recorder analyzes incoming signals into minimum, maximum, and average values per channel. This is done over preset time cycles. These values are then printed in a table including measurement point identification, times, and engineering units.

Serial interface

Communicate remotely with any Mega-Log series recorder using RS 232/422/485 serial interfaces.

Relays

Program the recorder to transmit limit infringements and faults. The four relays can be individually programmed for any channel.

Special Inputs

In addition to the standard inputs, the Mega-Log series recorder can directly accept input from:

- Thermocouples
- Thermal resistors (RTD)
- Voltage
- Current

Signal selection on the recorder is done directly via the keypad.

Virtual Mathematical Channels

Let your recorder do calculations for you. In addition to the normal analog channels, the recorder has three additional calculation channels:

- Mathematical combination of more than one channel for difference in differential pressure applications
- Multiplication for calculation of current and voltage
- Mathematical function for single channels (square root)

Operation Using Control Inputs

The Mega-Log series recorder will respond to various external inputs. These signals can:

- Change the paper feed rate
- Add explanatory text to the record
- Add the instantaneous values by operating a push button
- Preset the measuring time cycle or suppress recording, (When servicing, should only be done in combination with signal analysis)

Counting and Quantity Recording

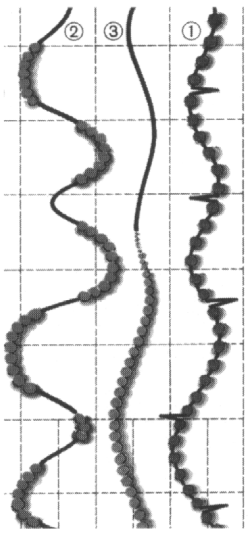
The Mega-Log t can record quantities by using either two count inputs or integrating the analog input signals. The recorder prints these values in an easy-to-read tabular report giving measurement period, daily, monthly, and total quantities.

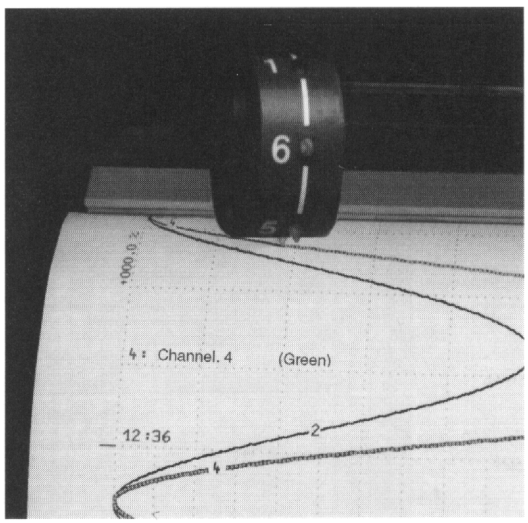
Overwrite principle:

1 Spikes – Safety line indicates where rapid changes occurred

2 Limit values – color marks the trace when it becomes critical

3 No ink – Safety line writes when others loose their color





Interfaces

Dynamic Process Control

Using this interface, the recorder can learn and store the sequence of repeating process batches. Variations from a stored reference process in subsequent processes are dynamically monitored for infringement of present tolerance bands. If infringement occurs, the effect is the same as limit infringement (text printout, change feed rate, activate relay).

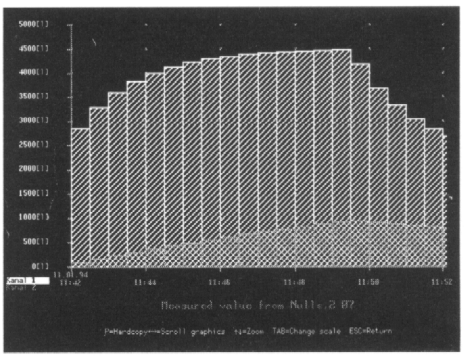
Serial interface/Readex T

The Mega-Log series can be connected to a PC enabling remote communication via an optional RS 232/422/485 interface. When an interface is selected, Readex T, IBM-compatible software, is supplied allowing you to obtain process information instantaneously. Readex T enables:

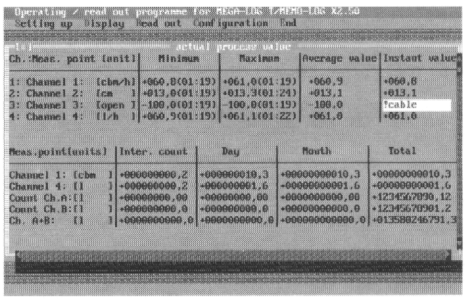
- Remote set up and storage of various process unit parameters
- Text printout on the recorder
- A central location for viewing process parameters such as: minimum, maximum, and average values.

Memory/readout of signal analysis

The signal analysis, compiled minimum, maximum, and average (or counter value) information can be stored in the unit by selecting optional memory: 128 K or 512 K. The stored data can be transmitted to a PC, displayed, and stored on a hard disk. This allows further analysis of process data using a spread sheet program. This is also included in the Readex T software.



Graphic display of signal analysis using Readex T software



Operational level/measured value table using Readex T software

Set up/Operation

Set up/Operation

Matching the recorder to the measurement application and reading the values can be done at the recorder or from a remote IBM-compatible PC using supplied software.

Local Input and Read-Out

Local operation is done using the film keypad on the front of the recorder. All set up steps are divided into functional groups. Each group covers a specific subject. This means that all general parameters such as feed rate, date, and time, as well as channel specific values are combined. Your benefits include:

- Quick access to single set up positions for changes
- Structured and user led system for initial set up
- Expansion options are just tagged to the end

Changing values is possible by following a simple schematic using five operation keys. The display assists in every step with explanatory text.

If the unit is not being set up, the actual values can be:

- Called up one at a time
- Displayed as a bar graph or numerically per channel
- Displayed in a scroll sequence for single or all channels

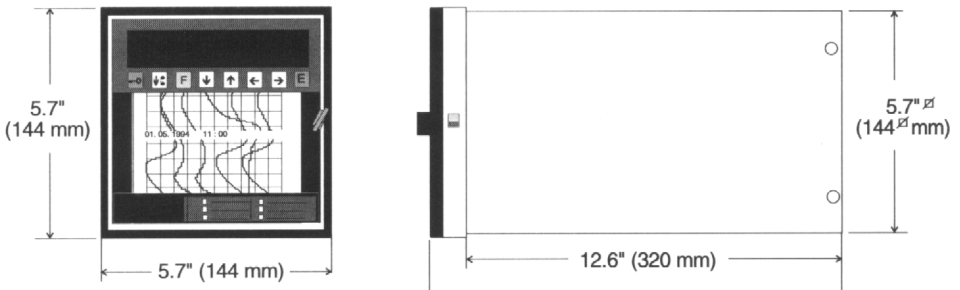
On request, trends, minimum, maximum, and average values can be displayed.

Remote Operation

Using a serial interface, you can operate (set up) or obtain measured values from multiple recorders at a central location. Modern window technology enables virtual self-explanatory operation. The program runs on all DOS-based IBM-compatible computers. Advantages include:

- Fast set up of all parameters similar or common to a number of recorders
- Evaluation of all measured values in the framework of data analysis
- Easily accessible and complete central information

Dimensions
Mega-Log t/tl/tn/tp



front and side elevations

Panel cutout 138^{+1} mm x 138^{+1} mm

Terminal Connection
Mega-Log t/tl/tn/tp

Analog Inputs

111	Channel 1	Sense/Loop-power +
112	Channel 1	Pt100A/Loop-power -
113	Channel 1	Pt100B/Not used
211	Channel 2	Sense/Loop-power +
212	Channel 2	Pt100A/Loop-power -
213	Channel 2	Pt100B/Not used
311	Channel 3	Sense/Loop-power +
312	Channel 3	Pt100A/Loop-power -
313	Channel 3	Pt100B/Not used
411	Channel 4	Sense/Loop-power +
412	Channel 4	Pt100A/Loop-power -
413	Channel 4	Pt100B/Not used
511	Channel 5	Sense/Loop-power +
512	Channel 5	Pt100A/Loop-power -
513	Channel 5	Pt100B/Not used
611	Channel 6	Sense/Loop-power +
612	Channel 6	Pt100A/Loop-power -
613	Channel 6	Pt100B/Not used

Relays

41	Relay 1	Normally closed (nc)
42	Relay 1	Normally open (no)
43	Relay 1	Common (c)
44	Relay 2	Normally closed (nc)
45	Relay 2	Normally open (no)
46	Relay 2	Common (c)
51	Relay 3	Normally closed (nc)
52	Relay 3	Normally open (no)
53	Relay 3	Common (c)
54	Relay 1	Normally closed (nc)
55	Relay 1	Normally open (no)
56	Relay 1	Common (c)

Control Inputs

81	Time mark 1
82	Time mark 2
83	External measuring period command
84	Stop recording
85	Count input A
86	Count input B
87	Time synchronization (remote sync.)
88	External feed rate change
89	Instantaneous value printout
90	Text 2^0
91	Text 2^1
92	Text 2^2
93	Text 2^3
94	Text print command
95	Supply remote synchronization +
96	Output remote synchronization
97	Not used
98	Not used

Serial Interface

Sub-D connector to DIN 41 652/9-pole socket

RS 485	RS 422	RS 232
1. Screen	Screen	Screen
2. –	–	TXD
3. RXD/TXD(–)	RXD(–)	RXD
4. –	TXD(–)	–
5. GND	GND	GND
6. –	–	–
7. –	GND	GND
8. RXD/TXD(+)	RXD(+)	–
9. –	TXD(+)	–

Specifications Mega-Log t/tl/tn/tp

Measurement Range:	0...1/10 V 0/4...20 mA using a shunt (included)
Input Impedance:	Voltage ≥ 1 MOhm, Current: 50 Ohm (external)
Accuracy:	
Base Accuracy	≤ 0.5% of full scale
Long Term Drift	≤ 0.2% of full scale
Power Up Drift	≤ 0.1% of full scale
Temperature Drift	≤ 0.1% of full scale/10K
Operating Conditions:	To DIN 40040, 43782, Part 2
Ambient Temperature	32...122°F (0...50°C) noncondensing
Storage Temperature	-4...158°F (-20...70°C)
Recording Paper	To DIN 16234
EMI:	To NAMUR recommendation (AK 05), February 1988: No substantial functional interference due to:
Elect. fast transient (burst)	Level 4 (IEC 801-4/VDE 0843/4)
Electrostatic discharge	Level 3 (IEC 801-4/VDE 0843/2)
Electromagnetic fields	Level 2 (IEC 801-3/VDE 0843/3)
Normal mode noise rejection:	40 dB at input range/10 (50/60 Hz ± 0/5 Hz)
Common mode noise rejection:	≤ 0.1% measurement span at 160 V, 50/60 Hz
Power failure:	No functional loss on power loss for up to 20 ms
Potential difference:	Channel to channel 160 V
EMI emitted:	To EN 55011: Class B
Display:	Front door integrated 2 x 20 digit fluorescent display for digital and/or bar graph display of measured values.
Dead Band:	≤ 0.25%
Paper feed rate:	
Feed Rate Types:	Standard, Event I, Event II (optional, external)
Presettable to:	0, 5, 10, 20, 60, 120, 240, 300, 600, 1200, 1800, 3600, 7200 mm/hr)
Paper type:	Selectable roll chart (approx. 24 m) Z-fold (12 m)
Chart Divisions:	Presettable in rough (5...15 divisions) and fine (2, 5, 10) grid per channel
Recording Range Per Channel:	Part signal range: 000.1...100% in engineering units Channel offset: 1 mm...100 mm preselectable
Supply ranges:	AC: 115, 230 (50/60 Hz ±10/-15%) DC: 24 V ±20%
Electrical security:	To VDE 0411/IEC 348
Primary fuse:	315 mA slow blow (230 V power supply) 630 mA slow blow (115 V power supply)
Housing:	144 x 144 mm sheet steel for panel mounting
Housing Door:	Selectable with latch or lock (optional) with paper outlet, integrated display
Protection class:	NEMA 13 (IP 54 to DIN 40050)
Operational angle:	90° ± 10° without limitation 90° ± 30° with limitation on recording
Installation depth:	320 mm
Connections:	Spade connectors (DIN 46244) 6.3 x 0.8 mm or 2.8 x 0.8 mm (Optional plug on screw terminals)

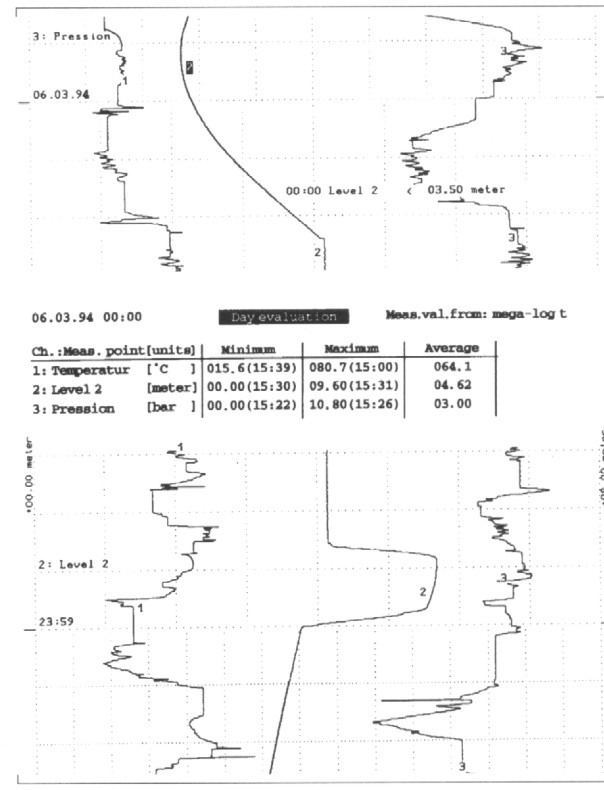
Specifications/Options Mega-Log t/tl/tn/tp

30 Event Text	Maximum 15 digit per event text entry
Integration	Additional integration of analog signal Presettable per channel Presettable integration time base (second, minute, hour, and day) Four counters per analog input for: - Presettable measuring period (10 digit) - Day (10 digit) - Month (12 digit) - Totalizer (12 digit)
Periodic Printout (Statistics)	Analysis of analog input into: minimum, maximum, and average values over selectable time cycles
Mathematic Module	Three additional channels. These mathematically combine the values on the analog inputs (sum, difference, product, division)
Housing Models	Desktop model, laboratory housing
Multi Range Voltage Board	+/- 10 V, +/- 5 V, +/-2 V, +/- 1 V, +/- 200 mV, +/- 100 mV, +/- 50 mV, +/- 20 mV; linear squared; special currents using 50 ohm shunt. Thermocouple types: L, U, N, B, S, R, K, J, T Compensation: Internal, External: 20°C, 50°C, 60°C,70°C, 80°C all galvanically isolated Accuracy: see above Thermocouple: additive +/- 2 K using internal reference.
Resistive Thermometer	Pt100, Pt100b, Pt100c, Pt1000, Pt500 [-148...1112°F (-100...600°C)] Ni100 [-76...356°F (-60...180°C)] Accuracy: see above
2 count inputs	Maximum 25 Hz (function, see control inputs)
Control Inputs	To DIN 19 240: Feed rate change, time marks, measurement external start and stop, instantaneous value printout, 15 text printouts externally controlled, time synchronization (in connection with control input "remote synchronization") Function: Logical 0 equals -3...5 V Logical 1 equals 12...30 V a) External voltage source with - Positive voltage impulses up to 24 V - Input resistance: approx. 10 kOhm - Bounce time: max. 5 ms b) Potential-free contact
Control Outputs:	One control output for remote synchronization of a number of recorders. On hour change: momentary contact for 700 ms
Auxiliary Voltage:	Aux. voltage from recorder, 24 V DC, 100 mA load
Serial Interface:	RS 232 C, RS 422, RS 485 (includes software)

Specific Features Mega-Log t

Function
Fast line chart recorder for maintenance-free, long-term recording. High resolution linear array thermal print head

- For text
- Grid
- Signal curves



Fast spikes are recorded by the linear array thermal print head.

Minimum, maximum, and average values are printed in tabular format at preset intervals

Specifications Mega-Log t

Measurement Unit

Damping: Response time presettable: 0...999.9 s
Basic system damping: Neglectable

Recording Unit

Recording System: Linear array thermal print head

Channel Identification: Printout of channel identification number next to signal curve

Order Code Mega-Log t

MT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |

1 **POWER SUPPLY**
- H 230 V AC 50/60 Hz
- F 115 V AC 50/60 Hz
- D 24 V DC
- Y Special Version

2 **MODEL**
- 1 144 x 144 panel mounted/roll chart paper cassette
- 3 144 x 144 panel mounting/z-fold paper cassette
- 2 Desk top model/roll chart paper cassette (rubber feed and mains cover)
- 4 Desk top model/z-fold paper cassette (rubber feed and mains cover)
- 6 Laboratory housing I (for units without HW options with roll chart paper cassette
- 5 Laboratory housing I (for units without HW options with Z-fold paper cassette
- 7 Laboratory housing II (for units with HW options with roll chart paper cassette)
- 8 Laboratory housing II (for units with HW options with z-fold paper cassette)
- A Wall cabinet IP65, roll chart paper cassette W x H x D - 600 x 321 x 400 mm
- B Wall cabinet IP65, z-fold paper cassette W x H x D - 600 x 321 x 400 mm
- Y Special models

3 **OPERATING LANGUAGE/PROGRAM**
- 1 American
- 2 American with 30 event texts
- Y Special version

4 **FRONT DOOR AND PAPER ILLUMINATION**
- A Door (low reflection)
- B Door with lock (low reflection)
- E Door with paper illuminations
- F Door with lock, paper illumination

5 **SIGNAL PREPARATION AND EVALUATION**
- A Without preparation
- B MM - mathematic module
- C INT - Integration
- D SA - Periodic statistic printout of maximum/minimum/average values
- E MM + INT
- F MM + SA
- G INT + SA
- H MM + INT + SA
- I DPC = Dynamic process control
- K DPC + MM
- L DPC + INT
- M DPC + SA
- N DPC + MM + INT
- O DPC + MM + SA
- P DPC + INT + SA
- Q DPC + MM + INT + SA

6 **COUNT INPUTS/CONTROL INPUTS I**
- 0 Without count inputs/control inputs I
- 1 CI - 2 count inputs
- 2 TMC - 2 time marks
- 3 REM - External control inputs
- 4 CI + TMC
- 5 CI + REM
- 6 TMC + REM
- 7 CI + TMC + REM

7 **CONTROL INPUTS II**
- 0 Without control inputs II
- 1 EF - External feed rate change
- 2 MOM- Instantaneous value printout
- 3 ETP - 15 selectable texts (printout)
- 4 EF + MOM
- 5 EF + ETP
- 6 ETP + MOM
- 7 EF + MOM + ETP

8 **FURTHER IN/OUTPUTS**
- A Without further outputs
- B (N) [V] RS232 - Serial Interface RS 232 (+128 K) [+512 K]
- C (O) [W] RS4 - Serial interface RS 485/422 (+128 K) [+512 K]
- D SYNC - remote synchronization
- E REL - Relay output
- F (P) [X] RS232 + REL (+128 K) [+512 K]
- G (Q) [Z] RS4 + REL (+128 K) [+512 K]
- H (R) [1] RS232 + SYNC (+128 K) [+512 K]
- I (S) [2] RS4 + SYNC (+128 K) [+512 K]
- K (T) [3] RS232 + REL + SYNC (+128 K) [+512 K]
- L (U) [4] RS4 + REL + SYNC (+128 K) [+512 K]

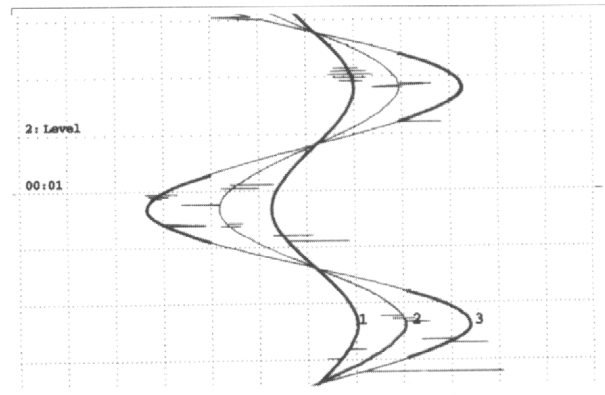
9 **IN/OUTPUTS CHANNEL 1**
- 1 Standard input 0-1/10 V, 0/4-20 mA
- 6 Multifunction input (for ranges see technical information)
- Y Special versions

10 – 14 **IN/OUTPUTS CHANNELS 2 – 6**
- 0 Channel 2 not required (only one-channel versions)
- 1 Standard input 0-1/10 V, 0/4-20 mA
- 5 Loop-power supply (24 V DC 25 mA)
- 6 Multi-function input (for ranges see specifications)
- Y Special versions

Specific Features Mega-Log tl

Function
Fast line chart recorder using patented overwrite technology

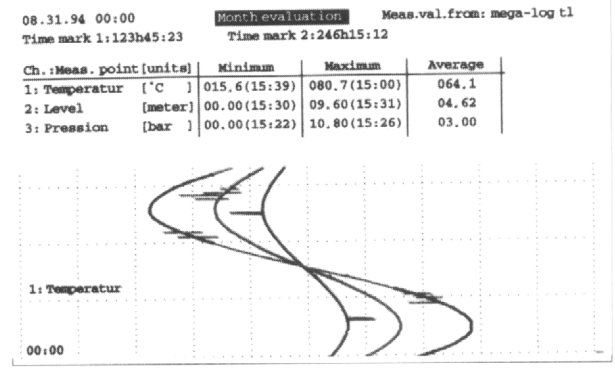
- High resolution linear array thermal print head for text, grid, and Safetyline.
- 1, 2, or 3 colored curves for fast channel identification.



Fast spikes are recorded by the linear array thermal print head.

Minimum, maximum, and average values are printed in tabular format at preset intervals

The Mega-Log tl can be programmed to use its patented overwrite technology to overprint limit infringements in color.



Specifications Mega-Log tl

Measurement Unit

Damping:

Response time presettable: 0...999.9 s
Basic system damping: Neglectable

Recording Unit

Pens

Line length: approximately 1500 m at 20 mm/h

Color Sequence

Channel 1: blue
Channel 2: red
Channel 3: green
Signal curves are underlayed by Safetyline, thermal line. Additional channel identification via curve numbering.

Order Code Mega-Log tl

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- Y Special versions

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- 0 Channel 2 not required (only one-channel versions)
- 1 Standard input 0-1/10 V, 0/4-20 mA
- 6 Multi-function input (for ranges, see specifications)
- Y Special versions

12 **LOOP-POWER SUPPLY 24 V DC 25 mA ±10%**
- A Without loop-power
- B One loop-power supply
- C Two loop-power supplies
- D Three loop-power supplies
- Y Special version

13 **PEN LIFT/LOWER FUNCTION**
- 0 Without pen lift/lower function
- 1 Channel 1 with pen lift/lower function
- 2 Channel 2 with pen lift/lower function
- 3 Channel 3 with pen lift lower function
- 4 Channel 1 and 2 with pen lift/lower function
- 5 Channel 1 and 3 with pen lift/lower function
- 6 Channel 2 and 3 with pen lift/lower function
- 7 All channels with pen lift/lower function

Specific Features Mega-Log tn

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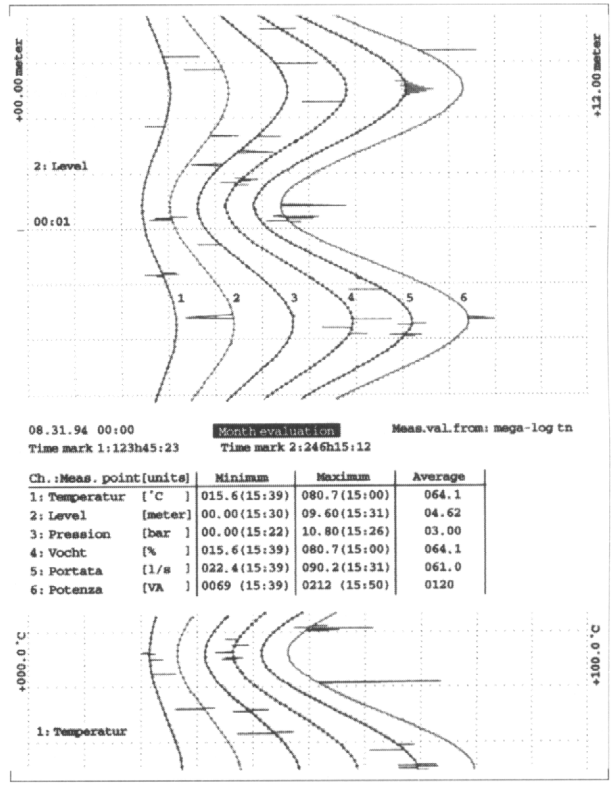
Fast color line chart recorder using patented overwrite technology.

- High resolution linear array thermal print head for text, grid, and Safetyline.
- 2, 3, or 6 colored curves for fast channel identification



Fast spikes are recorded by the linear array thermal print head.

Minimum, maximum, and average values are printed in tabular format at preset intervals

The Mega-Log tn can be programmed to use its patented overwrite technology to overprint limit infringements in color.

Specifications Mega-Log tn

Measurement Unit

Damping:

Response time presettable:
0...999.9 s
Basic system damping: Neglectable

Recording Unit

Pens

Two-, three-, or six-channel pen wheel

Dots/Color Chamber Color Sequence

Two- and three-channel versions:
Channel 1: blue
Channel 2: red
Channel 3: green

Six-channel version:
Channel 1: violet
Channel 2: red
Channel 3: black
Channel 4: green
Channel 5: blue
Channel 6: brown

Signal curves are underlayed by Safetyline, thermal line. Additional channel identification via curve numbering.

Order Code Mega-Log tn

TN | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |

1 **POWER SUPPLY**
- H 230 V AC 50/60 Hz
- F 115 V AC 50/60 Hz
- D 24 V DC
- Y Special Version

2 **MODEL**
- 1 144 x 144 panel mounted/roll chart paper cassette
- 3 144 x 144 panel mounting/z-fold paper cassette
- 2 Desk top model/roll chart paper cassette (rubber feed and mains cover)
- 4 Desk top model/z-fold paper cassette (rubber feed and mains cover)
- 6 Laboratory housing I (for units without HW options with roll chart paper cassette
- 5 Laboratory housing I (for units without HW options with Z-fold paper cassette
- 7 Laboratory housing II (for units with HW options with roll chart paper cassette)
- 8 Laboratory housing II (for units with HW options with z-fold paper cassette)
- A Wall cabinet IP65, roll chart paper cassette W x H x D - 600 x 321 x 400 mm
- B Wall cabinet IP65, z-fold paper cassette W x H x D - 600 x 321 x 400 mm
- Y Special models

3 **OPERATING LANGUAGE/PROGRAM**
- 1 American
- 2 American with 30 event texts
- Y Special version

4 **FRONT DOOR AND PAPER ILLUMINATION**
- A Door (low reflection)
- B Door with lock (low reflection)
- E Door with paper illuminations
- F Door with lock, paper illumination

5 **SIGNAL PREPARATION AND EVALUATION**
- A Without preparation
- B MM - mathematic module
- C INT - Integration
- D SA - Periodic statistic printout of maximum/minimum/average values
- E MM + INT
- F MM + SA
- G INT + SA
- H MM + INT + SA
- I DPC = Dynamic process control
- K DPC + MM
- L DPC + INT
- M DPC + SA
- N DPC + MM + INT
- O DPC + MM + SA
- P DPC + INT + SA
- Q DPC + MM + INT + SA

6 **COUNT INPUTS/CONTROL INPUTS I**
- 0 Without count inputs/control inputs I
- 1 CI - 2 count inputs
- 2 TMC - 2 time marks
- 3 REM - External control inputs
- 4 CI + TMC
- 5 CI + REM
- 6 TMC + REM
- 7 CI + TMC + REM

7 **CONTROL INPUTS II**
- 0 Without control inputs II
- 1 EF - External feed rate change
- 2 MOM- Instantaneous value printout
- 3 ETP - 15 selectable texts (printout)
- 4 EF + MOM
- 5 EF + ETP
- 6 ETP + MOM
- 7 EF + MOM + ETP

8 **FURTHER IN/OUTPUTS**
- A Without further outputs
- B (N) [V] RS232 - Serial Interface RS 232 (+128 K) [+512 K]
- C (O) [W] RS4 - Serial interface RS 485/422 (+128 K) [+512 K]
- D SYNC - remote synchronization
- E REL - Relay output
- F (P) [X] RS232 + REL (+128 K) [+512 K]
- G(Q) [Z] RS4 + REL (+128 K) [+512 K]
- H (R) [1] RS232 + SYNC (+128 K) [+512 K]
- I (S) [2] RS4 + SYNC (+128 K) [+512 K]
- K (T) [3] RS232 + REL + SYNC (+128 K) [+512 K]
- L (U) [4] RS4 + REL + SYNC (+128 K) [+512 K]

9 **NUMBER OF ANALOG INPUTS**
- 2 Two analog inputs
- 3 Three analog inputs
- 6 Six analog inputs

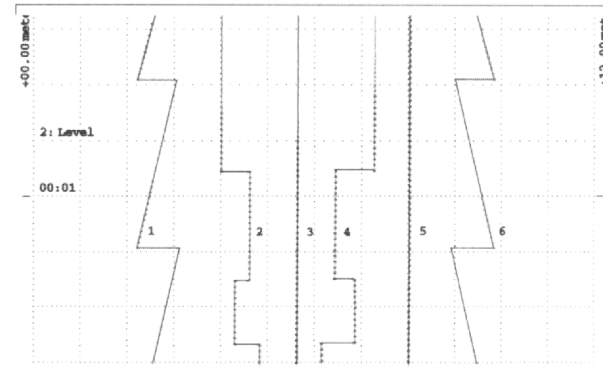
10 – 11 **IN/OUTPUTS CHANNELS 1 – 2**
- 1 Standard input 0-1/10 V, 0/4-20 mA
- 6 Multi-function input (for ranges see technical information)
- Y Special versions

12 – 15 **IN/OUTPUTS CHANNEL 3 – 6**
- 0 Channel not required
- 1 Standard input 0–1/10 V, 0/4 – 20 mA
- 5 Loop-power supply (24 V DC 25 mA)
- 6 Multi-function input (for ranges, see specifications)
- Y Special versions

Specific Features Mega-Log tp

Function
Fast six-channel color dot chart recorder

- High resolution linear array thermal print head for dot to dot connecting line, text, and grid.
- Six colored curves

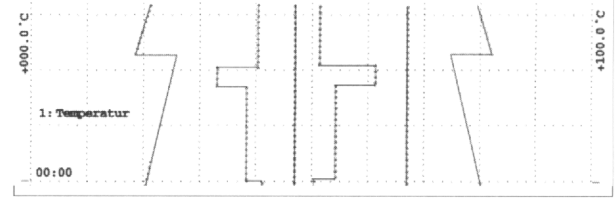


08.31.94 00:00 Month evaluation Meas.val.from: mega-log tp
Time mark 1:123h45:23 Time mark 2:246h15:12

Ch.:Meas. point	[units]	Minimum	Maximum	Average
1: Temperatur	[°C]	015.6(15:39)	080.7(15:00)	064.1
2: Level	[meter]	00.00(15:30)	09.60(15:31)	04.62
3: Pression	[bar]	00.00(15:22)	10.80(15:26)	03.00
7: Vocht	[%]	015.6(15:39)	080.7(15:00)	064.1
8: Portata	[l/s]	022.4(15:39)	090.2(15:31)	061.0
9: Potenza	[VA]	0069 (15:39)	0212 (15:50)	0120

Safety line as dot to dot connecting line for fast channel identification

Minimum, maximum, and average values are printed in tabular format at preset intervals



Specifications Mega-Log tp

Measurement Unit

Damping: Scan time for all six inputs: 7.5 seconds
Presettable filter and intelligent print function

Recording Unit

Pens Six channel pen wheel

Dots/color 500,000

Color Sequence
Channel 1: violet
Channel 2: red
Channel 3: black
Channel 4: green
Channel 5: blue
Channel 6: brown

Print cycle 7.5 seconds for all six channels

Order Code Mega-Log tp

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- A Multifunction input

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