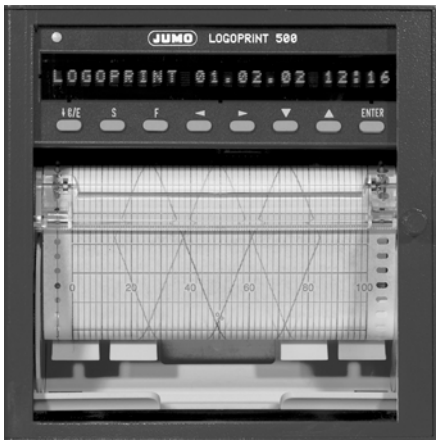
JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex CM20 2DY, UK
Phone: +44 1279 635533
Fax: +44 1279 635262
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6733 Myers Road
East Syracuse, NY 13057, USA
Phone: 315-437-5866
1-800-554-5866
Fax: 315-437-5860
E-mail: info.us@jumo.net
Internet: www.jumousa.com

LOGOPRINT® 500

Printing recorder with text printing and 24-character LED dot-matrix display



Type 706030

Brief description

The printing recorder is equipped with 3 or (optionally) 6 measurement inputs, which are electrically isolated from one another. The evaluation of the measurement traces of the printing recorder can be assisted by extensive text printing. The recorder can be programmed either by using the 8 keys on the front of the instrument or through a PC setup program.
Thermocouples, resistance thermometers, resistance transmitters, potentiometers, voltages or currents (standard signals) are possible as input signals. The appropriate linearizations are carried out automatically, but can also be adapted to customer-specific linearizations with the help of the PC setup program.
Further outstanding features of the LOGOPRINT 500, which are already included in the basic version, are four open-collector outputs for signaling infringements of limits and faults, eight event traces, as well as peak value recording.
The color assignments (measurement traces and texts) are freely programmable via the PC setup program, which is available as an accessory.

Overview of functions

Analog inputs (configurable and isolated)	3 or 6 inputs for: - thermocouples - resistance thermometers - resistance transmitters - potentiometers - voltage and current
8 logic inputs	available as extra code
Outputs	- 4 open-collector outputs available as extra code: - interface for 8 relay outputs - supply for 2-wire transmitter
Recording	- measurement traces - text printing - event traces
Setup interface	for configuration and parameter setting via PC
RS422/RS485 interface	extra code for the data transfer from and to the recorder
Supply voltage	- 110 — 240V AC +10/-15%, 48 — 63Hz - 20 — 53V AC/DC ±0%, 48 — 63Hz

Features

- Limit monitoring
- Event traces
- Four open-collector outputs
- Peak value recording
- Extensive text printing
- Statistics (report) with minimum, maximum and mean values
- Event- and time-controlled chart speed
- Math and logic module (PC setup program is required)
- Universal chart cassette

Approvals/marks of conformity (see Technical data)

c UL us

2013-01-29/00355277

Technical data

Thermocouple input

Designation			Range	Linearisation accuracy[1]
Fe-Con	L	DIN 43710[2]	-200 to + 900°C	±0.2%
Fe-Con	J	EN 60584	-210 to +1200°C	±0.2% above -200°C
Cu-Con	U	DIN 43710[2]	-200 to + 600°C	±0.3%
Cu-Con	T	EN 60584	-270 to + 400°C	±0.5% above -200°C
NiCr-Ni	K	EN 60584	-270 to +1372°C	±0.2% above -150°C
NiCr-Con	E	EN 60584	-270 to +1000°C	±0.2% above -200°C
NiCrSi-NiSi	N	EN 60584	-270 to +1300°C	±0.2% above -150°C
Pt10Rh-Pt	S	EN 60584	-50 to +1768°C	±0.5% above 0°C
Pt13Rh-Pt	R	EN 60584	-50 to +1768°C	±0.5% above 0°C
Pt30Rh-Pt6Rh	B	EN 60584	0 — 1820°C	±0.5% above 500°C
Shortest span			Types L, J, U, T, K, E, N: Types S, R, B:	100°C 500°C
Range start/end			freely programmable within the limits in 0.1°C steps	
Cold junction			Pt 100 internal or thermostat as external constant	
Cold junction accuracy (internal)			± 1°C	
Cold junction temperature (external)			-50 to +100°C, adjustable through setup software	
Measurement time			for 3 channels < 2sec; for 6 channels < 4sec	
Input filter			2nd order digital filter; filter constant adjustable from 0 — 50.0sec	
Features			also programmable in °F; customer-specific linearizations	

[1] The linearization accuracy refers to the maximum span. The linearization accuracy is reduced for shorter spans.
[2] invalid DIN since 1995

Resistance thermometer input

	Connection	Range	Linearisation accuracy	Meas. current
Pt 100 EN 60751	2/3-wire 2/3-wire 4-wire 4-wire	-200 to +250°C -200 to +850°C -200 to +250°C -200 to +850°C	±0.6°C ±1.0°C ±0.5°C ±0.8°C	500µA 250µA 500µA 250µA
Pt 100 JIS	2/3-wire 2/3-wire 4-wire 4-wire	-200 to +260°C -200 to +649°C -200 to +260°C -200 to +649°C	±0.6°C ±1.0°C ±0.5°C ±0.8°C	500µA 250µA 500µA 250µA
Pt 500 DIN	2/3-wire 2/3-wire 4-wire 4-wire	-200 to +150°C -200 to +850°C -200 to +150°C -200 to +850°C	±0.6°C ±1.0°C ±0.5°C ±0.8°C	250µA 250µA 250µA 250µA
Pt 1000 DIN	2/3-wire 2/3-wire 4-wire 4-wire	-200 to +250°C -200 to +850°C -200 to +250°C -200 to +850°C	±0.6°C ±1.0°C ±0.5°C ±0.8°C	500µA 250µA 500µA 250µA
Ni 100	2/3-wire 2/3-wire 4-wire 4-wire	-60 to +125°C -60 to +180°C -60 to +125°C -60 to +180°C	±0.6°C ±1.0°C ±0.5°C ±0.8°C	500µA 250µA 500µA 250µA
Connection type	2-, 3- or 4-wire circuit			
Shortest span	15°C			
Probe lead resistance	max. 30Ω per core for 4-wire circuit max. 20Ω per core for 2- and 3-wire circuit for Pt 100 up to 260°C max. 10Ω per core in 2-wire and 3-wire circuit			
Range start/end	freely programmable within the limits in 0.1°C steps			
Measurement time	for 3 channels < 2sec; for 6 channels < 4sec			
Input filter	2nd order digital filter; filter constant adjustable from 0 — 50sec			
Features	also programmable in °F; customer-specific linearizations			

Resistance transmitter and potentiometer input

Range	Accuracy	Measuring current
up to 200Ω	±300mΩ	500µA
up to 400Ω	±600mΩ	250µA
up to 800Ω	±1Ω	250µA
up to 2000Ω	±2Ω	500µA
up to 4000Ω	±3Ω	250µA
Connection type	resistance transmitter: 3-wire circuit potentiometer: 2-, 3- or 4-wire circuit	
Shortest span	6Ω	
Probe lead resistance	max. 30Ω per core in 4-wire circuit max. 20Ω per core in 2-and 3-wire circuit up to 200Ω range: max. 10Ω per core in 2-and 3-wire circuit	
Resistance values	freely programmable within the limits in 0.1Ω steps	
Measurement time	for 3 channels < 2sec; for 6 channels < 4sec	
Input filter	2nd order digital filter; filter constant adjustable from 0 — 50.0sec	

Input for DC voltage or DC current

Basic range	Accuracy	Input resistance
-25 to +75mV	±100µV	R_E > 10 MΩ
0 — 100mV	±100µV	R_E > 10 MΩ
-100 to +100mV	±150µV	R_E > 10 MΩ
0 — 200mV	±150µV	R_E > 10 MΩ
-500 to +500mV	±1mV	R_E > 10 MΩ
0 — 1V	±1mV	R_E > 10 MΩ
-1 to +1V	±2mV	R_E > 10 MΩ
-5 to +5V	±10mV	R_E > 0.5 MΩ
0 — 10V	±10mV	R_E > 0.5 MΩ
-10 to +10V	±15mV	R_E > 0.5 MΩ
Shortest span	5mV	
Range start/end	freely programmable within the limits (up to 999mV in 0.01mV steps, from 1V in 1mV steps)	
4 — 20mA	±20µA	burden voltage 2.6V max.
0 — 20mA	±20µA	burden voltage 2.6Vmax.
-20 to+20mA	±40µA	burden voltage 2.6Vmax.
Shortest span	0.5mA	
Range start/end	freely programmable within the limits in 0.1mA steps	
Measurement time	for 3 channels < 2sec; for 6 channels < 4sec	
Input filter	2nd order digital filter; filter constant adjustable from 0 — 50.0sec	
Features	adjustable linearizations for thermocouples and resistance thermometers (for connection to transmitters without linearization)	

Transducer short-circuit/break

	Short-circuit[1]	Break[1]
Thermocouple	not recognized	recognized
Resistance thermometer	recognized	recognized [2]
Resistance transmitter	recognized	recognized
Potentiometer	not recognized	recognized[2]
Voltage up to ± 1V	not recognized	recognized
Voltage above ± 1V	not recognized	not recognized
Current	not recognized	not recognized

[1] The print head is positioned to 0%, ">>>>>>" appears in the LED dot-matrix display.
[2] In 4-wire circuit: only recognized at terminals 1 and 2.

Outputs

Three open-collector outputs	to signal over/underlimit
One open-collector output	to signal faults (e. g. end of chart)

Printing system

Drive	stepper motor
Sensitivity	0.2% or better referred to 100mm writing width
Reproducibility	0.25% or better referred to 100mm writing width
Display and recording accuracy	Class 0.5 referred to range limits and basic ranges

Print head	print head with penlift function - sufficient for approx. 1 million dots (depending on the ambient temperature)
Print colors	Violet, red, black for 3-channel printing recorder and violet, red, black, green, blue, brown for 6-channel printing recorder. The color assignment can be changed at will, through the setup program.
Over/underrun	electronically limited to 0 — 100mm writing width
Chart speed	programmable in the steps 0, 5, 10, 20, 60, 120, 240, 300, 360, 600, 720mm/h
Paper feed	by stepper motor and gearing
Chart cassette	cassette for roll chart and fanfold chart (with tear-off edge and paper-end switch)
Chart overall width / writing width sprocket roller spacing visible diagram length overall length	roll or fanfold chart to DIN 16320 120mm / 100mm 110mm roll chart: 60mm; fanfold chart: 30 — 60mm roll chart: 16m or 32m; fanfold chart: 15.6m

Electrical data

Supply (SMPS)	110 — 240V AC +10/-15% AC 48 — 63Hz, or 20 — 53V ±0% AC/DC 48 — 63Hz
Electrical safety Test voltages (type test) mains supply to measurement circuit mains supply to housing between measurement circuits measurement circuits to housing electrical isolation between the analog inputs	to EN 61010, Part 1, March 1994 overvoltage Category II, contamination Grade 2 with AC supply 2.3kV 50Hz, 1min; with AC/DC 510V 50Hz, 1min with AC supply 1.5kV 50Hz, 1min; with AC/DC 510V 50Hz, 1min 200V 50Hz, 1min 500V 50Hz, 1min up to 30V AC and 50V DC
Supply voltage sensitivity	less than 0.1% of range span
Power consumption	35VA max.
Data buffering	More than 4 years through lithium battery in RAM or 2 days with storage capacitor at 5 — 25°C ambient temperature. Additional backup in EEPROM.
Electrical connection	At rear through plug-in screw terminals, max. conductor cross-section 2.5mm^2 or 2x 1.5mm^2 with core end sleeves. Setup connector at the front behind flip-up dot-matrix display.
Electromagnetic compatibility (EMC) interference emission immunity to interference	EN 61326-1 Class B to industrial requirements

Housing

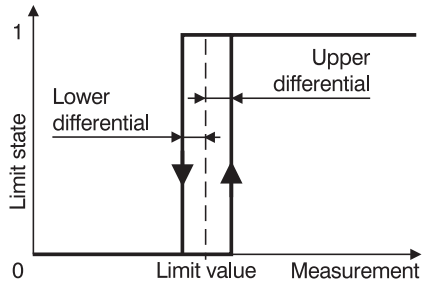
Housing type housing door	Housing for front-panel mounting to IEC 61554, galvanized sheet steel cast zink
Transport mechanism	in corrosion-resistant chrome-nickel steel
Chart cassette	in plastic (polycarbonate)
Bezel size	144mm x 144mm
Depth behind panel	212mm without screw terminals; 227mm with screw terminals plugged in
Panel cut-out	$138^{+1.0}$mm x $138^{+1.0}$mm
Housing mounting	in control panel to DIN 43834
Ambient temperature range	0 to 50°C
Ambient temperature error	0.2%/10°C
Storage temperature range	-20 to +70°C (without print head), -20 to +55°C (with print head)
Climatic conditions	20 — 70% relative humidity, no condensation
Operating position	normal position: vertical ± 30° (NL 90 ± 30, to DIN 16257)
Protection	to EN 60529 Category 2, front IP54 (IP65 with extra code 266), rear IP20
Weight	3.5 kg max.

Approvals/marks of conformity

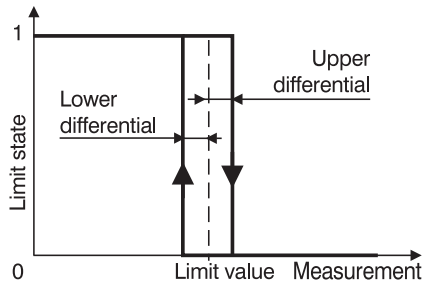
Mark of conformity	Testing laboratory	Certificates / certification numbers	Test basis	valid for
c UL us	Underwriters Laboratories	E 201387	UL 3111-1 CAN/CSA C22.2 No. 1010.1-92	the flush-mounted instrument; not in conjunction with any housing extra code

Operating modes

Limit monitoring
Eight limit comparators are available to monitor the limits.
Limits, differential values (hysteresis), limit comparator functions (lk), texts and the channels to be monitored can be programmed. The result of the monitoring is fed to the open-collector outputs (1 — 3) and the optional relay module (1 — 8) as limit state (logic 0 or 1).
The different lk functions are:
lk 7:



The limit state is set to 1 when:
measurement > limit + upper differential.
lk8:



as lk7, but function is reversed.

Chart speeds
The LOGOPRINT 500 can be programmed with four different operating modes for the chart speed:
1. Normal operation
2. Limit operation
If the measurement goes above/below the programmed limits, the recorder switches to the speed which has been programmed under “limit operation”.
3. External operation
A signal on one of the logic inputs at the back of the recorder switches to the speed which has been programmed under “external speed”.
4. Timed operation
The chart speed which is operative within a programmable time span.

Graphic print-out

Measurement traces

Zoom (plot area)
In zoom operation, an enlarged recording is made of a section of the full range of a trace.

Presentation range (offset)
This parameter is used to define the presentation range of a trace on the chart.

This assists the evaluation, in particular of traces which are close to each other or which overlap.

Peak value recording
The peak value recording can be switched on or off for each channel.
In the switched-off state, the present value of a channel is printed.
Since more values can be measured than can be printed, the minimum and maximum values measured between two lines to be printed are stored when the peak value recording is switched on. These minimum and maximum values are printed when peak value recording is activated.

Event traces
Eight event traces can be printed. Limit monitoring (limit comparators) or the state of the optional logic inputs can thus be documented on the chart.

Text printing

Text printing is used for comments on the recorded trace and for event recording.
Printing priorities can be assigned to texts, to serve as abort criteria during simultaneous text printing requests.
Text printing can be separately configured for each text, either time-optimized or during continued recording of traces.

Text printing facilities:
- Time, date
- Scaling of the channels
- Channel numbers
- Change of chart speed
- Recording start/end text
- “Power on” and “power off” text
- Print text to check the printing system and the service print
- 16 limit comparator texts[1] (eight for underlimit and eight for overlimit)
- 2 reports (calculate and print minimum, maximum and mean values)
- Eight external texts[1] (extra code)
- 16 binary-linked external texts[1] (extra code)
- Event counter[1] (extra code)

[1] These texts are buffered through a queue. As long as the queue is not full, complete documentation is assured.

Extra codes

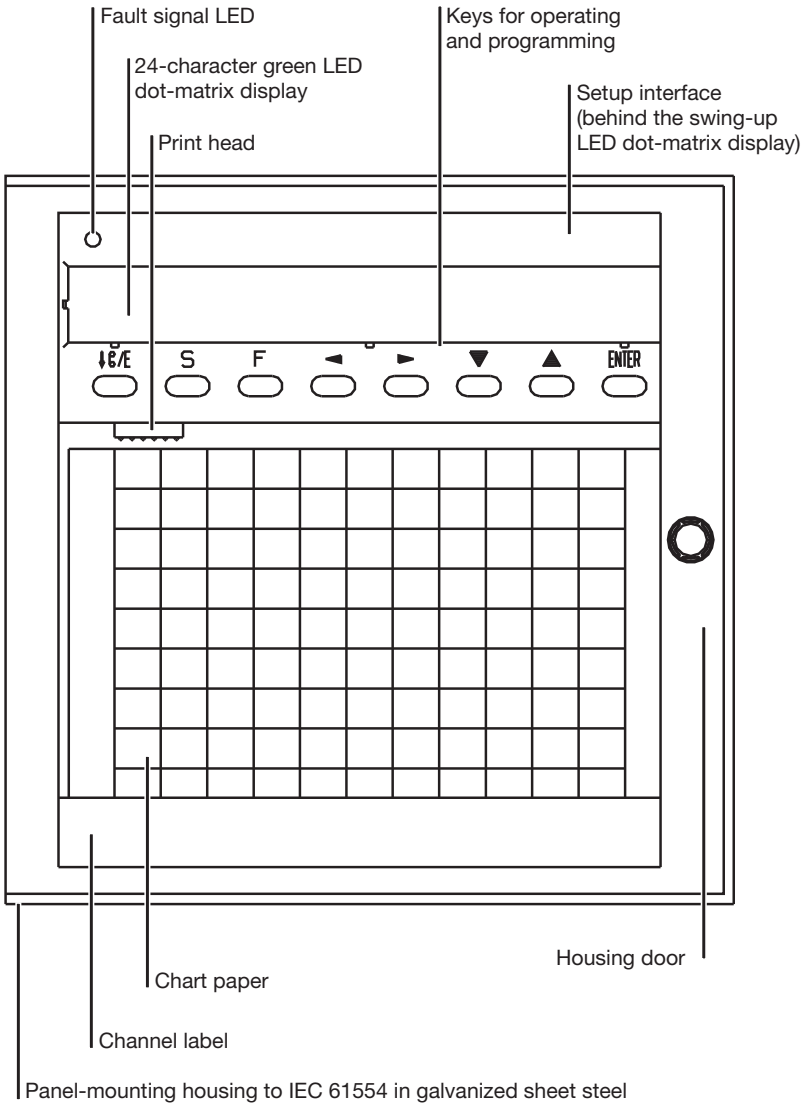
RS422/RS485 interface
This interface is intended for communication with higher-level systems (e. g. bus system or PC). It can be used to read out measurements, to monitor operating states and to transmit texts and values to the recorder.

Logic inputs
Eight logic inputs can be operated either through floating contacts or by the following voltage levels:
inactive: 0 — 5V / active: 20 — 35V
The voltage levels must be applied for 0.4sec.
Functions available include:
- External start/stop
- Activate external chart speed
- Text printing
- Start/stop external report
- Start scaling print
- Increment two event counters
- Key inhibit
- Event traces

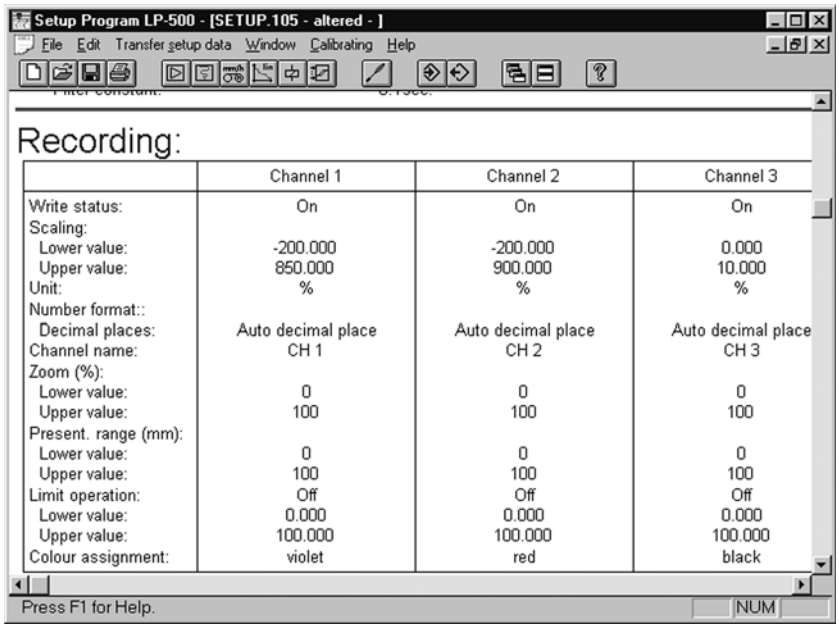
Supply for 2-wire transmitter
An electrically isolated supply for a 2-wire transmitter is available.
24V DC 45mA ± 5%

ER8 external relay module
The LOGOPRINT 500 can be equipped with an ER8 external relay module (eight relay outputs) to monitor infringements of upper and lower limits. The relay outputs are permanently assigned to the limit comparators. The assignment to the measurement channels can be made freely through the limit comparator parameter.
Contact rating:
3 A 250V AC 50Hz , or 3 A 30V DC
resistive load

Display and controls



Setup program



	Channel 1	Channel 2	Channel 3
Write status:	On	On	On
Scaling:			
Lower value:	-200.000	-200.000	0.000
Upper value:	850.000	900.000	10.000
Unit:	%	%	%
Number format::			
Decimal places:	Auto decimal place	Auto decimal place	Auto decimal place
Channel name:	CH 1	CH 2	CH 3
Zoom (%):			
Lower value:	0	0	0
Upper value:	100	100	100
Present. range (mm):			
Lower value:	0	0	0
Upper value:	100	100	100
Limit operation:	Off	Off	Off
Lower value:	0.000	0.000	0.000
Upper value:	100.000	100.000	100.000
Colour assignment:	violet	red	black

Operation and configuration

At the recorder
The eight keys on the instrument are used for operating the instrument, and to configure all the parameters essential to the operation.
The 24-character dot-matrix display is available for indicating and monitoring the measurements and parameters.

Via the setup program for PC (accessory)
The recorder can be configured using the setup program for PC (see diagram, bottom left) more conveniently than by using the instrument keys.
The configuration data of a configured instrument can be read out and altered using the setup program.
For a further instrument with the same configuration, the data can be copied through the setup program. The configuration data can be archived on data media and printed out.
In addition to the programming possibilities from the keys of the recorder, the setup program offers the following extra functions:

- Setting different print colors
- Customer-specific linearizations
- Setting the printing mode for the texts (printing mode: “Overwrite measurement trace” or “Interrupt measurement trace”)
- Printing priorities
- Math and logic module editor
- Various settings can be managed

Customer-specific linearizations
The setup program offers a choice between linear, square law and cube law linearization. There can be up to 41 calibration points for linear and square law linerarization, and up to 61 calibration points for cube law linearization. These calibration points are used to determine the coefficients for polynomials which are defined for each section, so that even a few calibration points produce a smooth graph.
Accuracy: depends on the shape of the graph and the selected linearization.

Language

The language setting (English, German, French) appears in the print-out and on the LED dot-matrix display.

Example of a recording with text print-out

(1) Recording start/end text

(2) Speed change to 120 mm/h through a logic input

(3) Printing the time (with every fourth print-out, the current chart speed, the programmed instrument name, or the date are printed alternately).

(4) If a selectable logic input is closed, the count of an event counter is incremented and documented together with the programmed text. Altogether, two event counters are available.

(5) The scaling of all active channels can be printed, either by pressing the F key (hold down for at least 4 sec), or through a logic input.

(6) The channel number can be printed in the selected channel color so that individual traces can be more easily differentiated.

(7) Documentation of over/underlimit conditions in the limit comparators.

(8) A total of eight event traces can be printed out. They can be used either to document the state of the limit comparators, or that of the logic inputs. The position of the event traces on the chart can also be programmed.

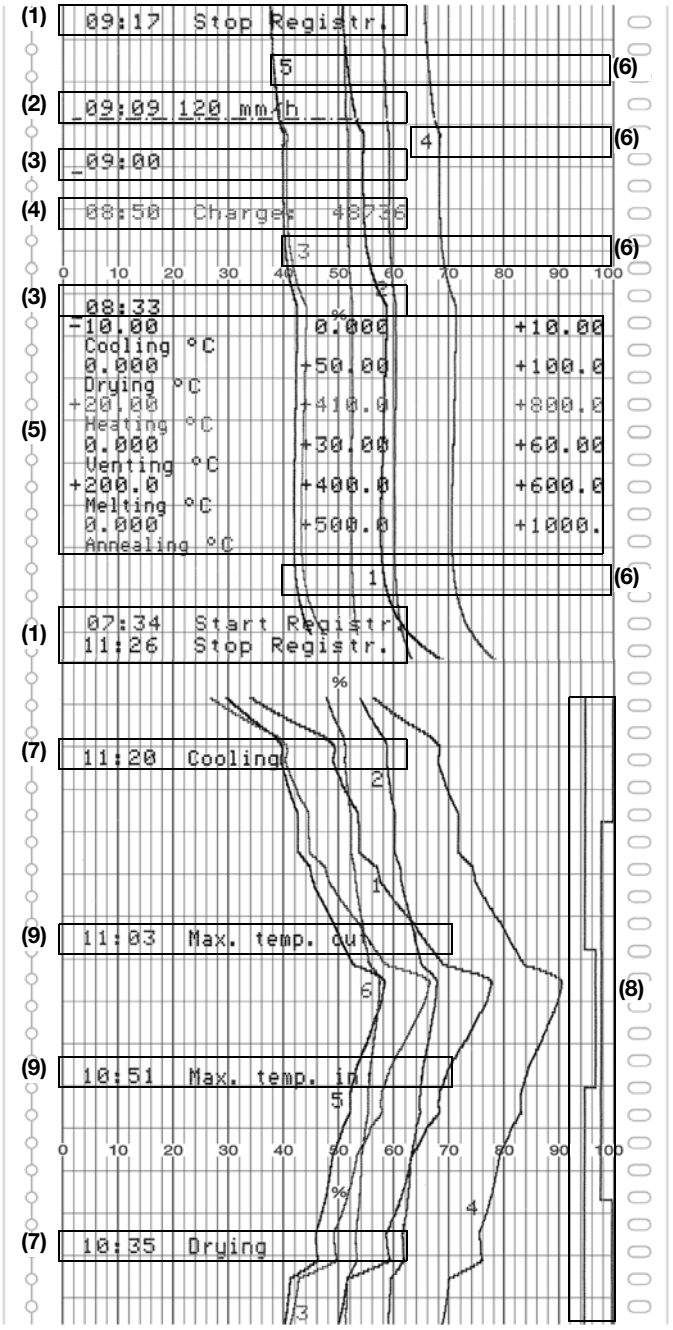
(9) Additional texts (external texts) can be printed if one logic input, or a combination of up to four logic inputs, is switched.

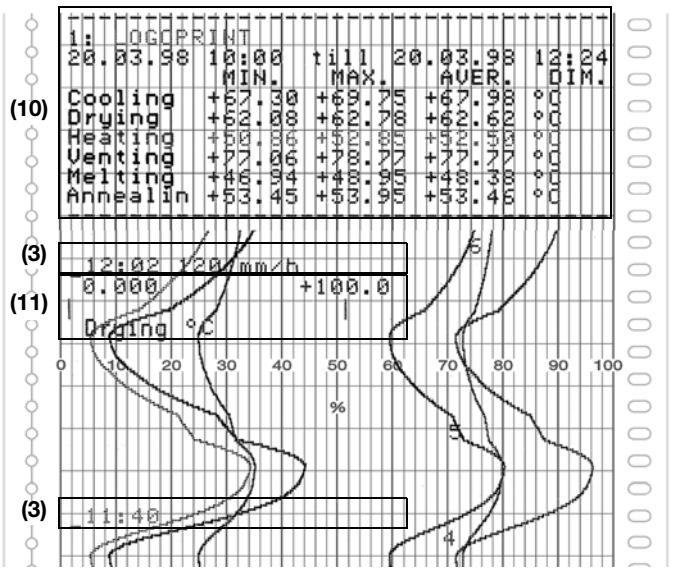
(10) Print-out of a report. The print-out shows the period of time in which the measurements were acquired and calculated, as well as the minimum, maximum and mean values of all active channels (including channel name and unit).

(11) As opposed to (5), the scaling of the channels can be performed alternately in a programmable spacing.

All texts which relate to a logic input can only be printed if the extra code “8 logic inputs” (code 259) has been implemented in the recorder.

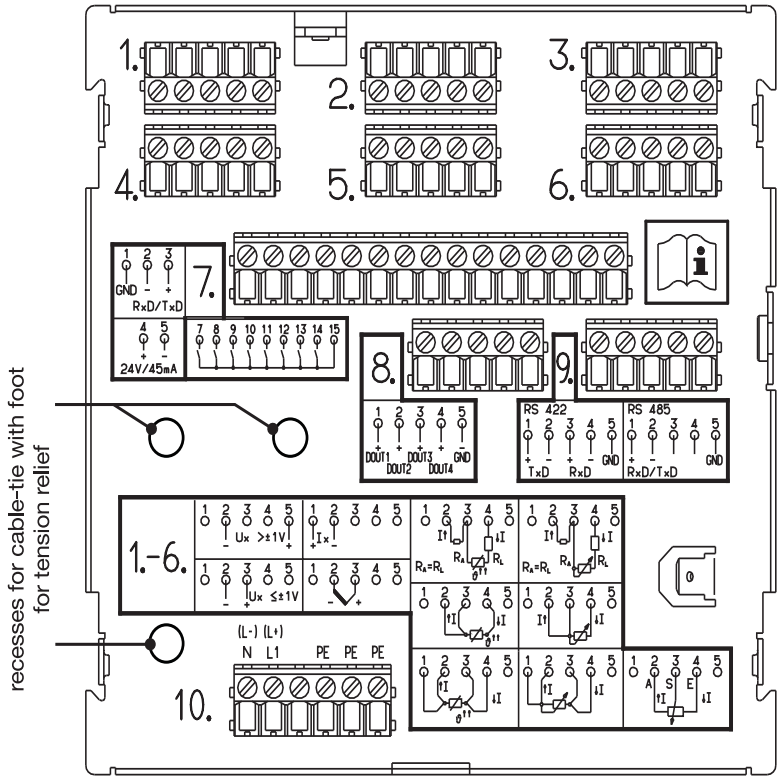
In the example, the traces which were printed above the report (10), are printed out in the normal mode, i.e. all traces share the entire chart width (0 — 100mm). The presentation range can be selected freely on the chart for each trace. This assists the evaluation, in particular of traces which are close to one another or which overlap. The traces below the report have thus been arranged over two sections of the chart (0 — 50mm and 50 — 100mm).



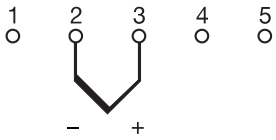
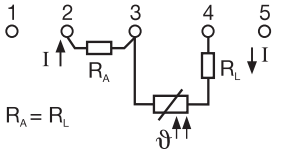
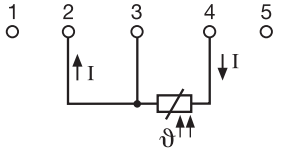
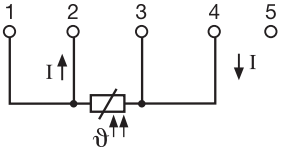


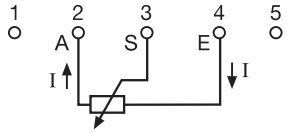
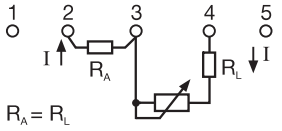
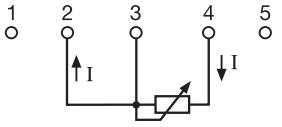
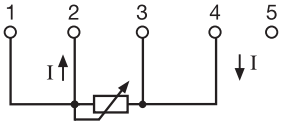
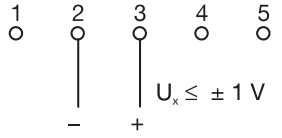
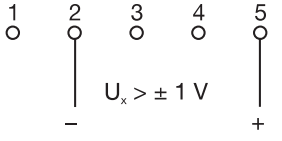
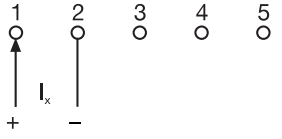
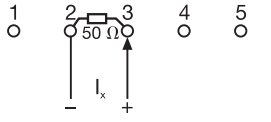
Connection diagram for maximum terminal assignment

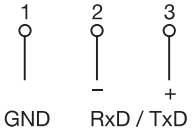
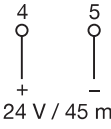
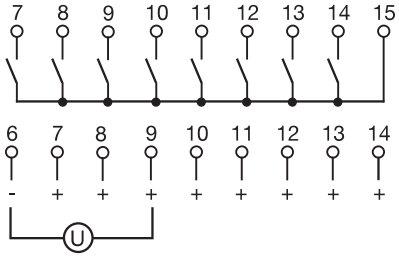
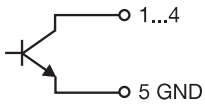
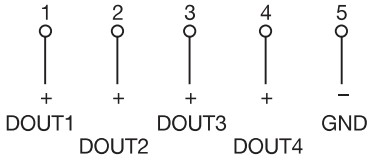
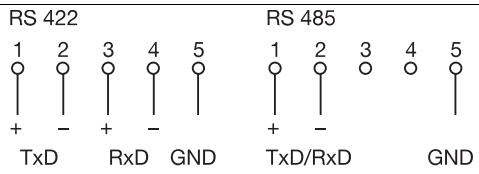
Rear view of 3/6-channel version with plug-in screw-clamp connectors



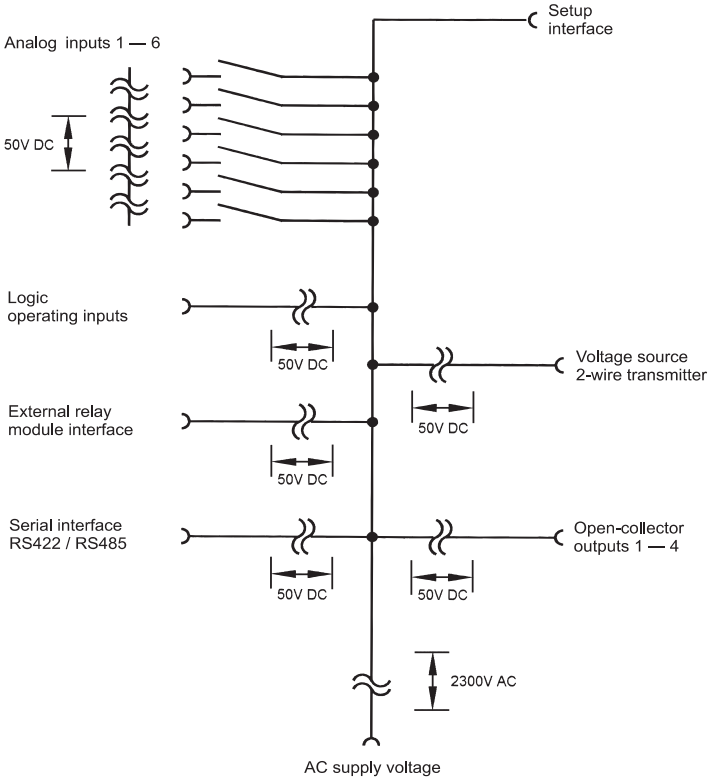
Connection for 3/6-channel version			**Diagram**
Supply as on label	N neutral L1 line PE protective earth	Connector 10.	(L-) (L+) N L1 PE PE PE 1 2 3 4 5 6

Analog inputs	**Inputs**						
	1	2	3	4	5	6	
	Connector						
Thermocouple	1.	2.	3.	4.	5.	6.	
Resistance thermometer in 2-wire circuit							
Resistance thermometer in 3-wire circuit							
Resistance thermometer in 4-wire circuit							

Analog inputs	Inputs						Diagram
	1	2	3	4	5	6	
	Connector						
Resistance transmitter in 3-wire circuit	1.	2.	3.	4.	5.	6.	 A = start S = slider E = end
Potentiometer in 2-wire circuit							
Potentiometer in 3-wire circuit							
Potentiometer in 4-wire circuit							
Voltage input up to ± 1 V							
Voltage input above ± 1 V							
Current input ± 20 mA							
Current input (shunt) ≤ ±20 mA (when using transducers with changeable internal resistance; extra code “terminal with shunt” is required)							

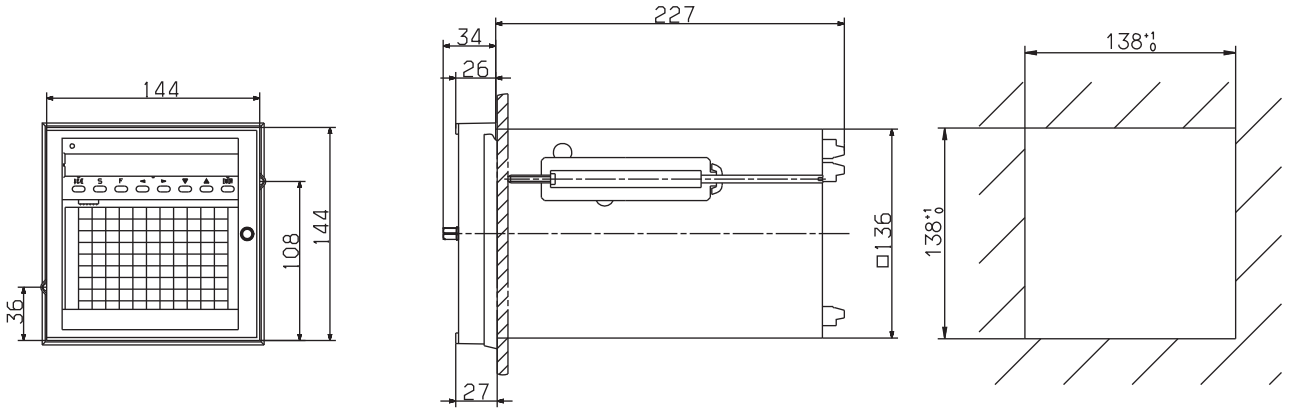
Inputs/outputs		Connector	Diagram
ER8 external relay module	Communication with external relay module	7.	
Voltage source for external 2-wire transmitter	24V 45mA ± 5%		
Logic operating inputs min. pulse length: HIGH 400msec LOW 400msec	Contact operation LOW = $R_{OFF} \geq 100k\Omega$ HIGH = $R_{ON} \leq 50\Omega$ Voltage operation LOW = 0 — 5V DC (inactive) HIGH = 20 — 35V DC (active)		
Open-collector outputs 	DOUT1 — DOUT4 U_{max} = 32V DC I_{max} = 100mA Residual voltage DOUT active $U_{DOUTactive}$ = 0.4 — 1.2V	8.	
RS422/RS485 serial interface	Communication with higher-level systems	9.	

Overview of the electrical isolation

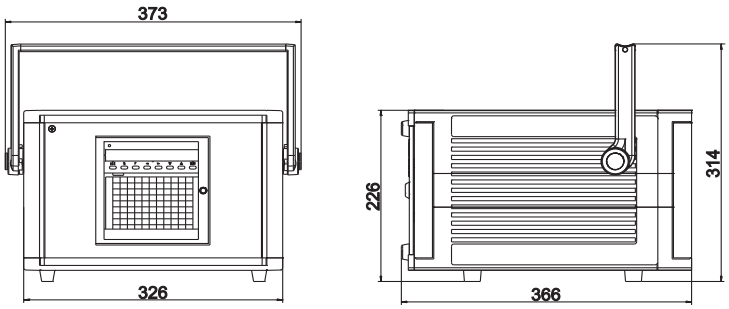


Dimensions

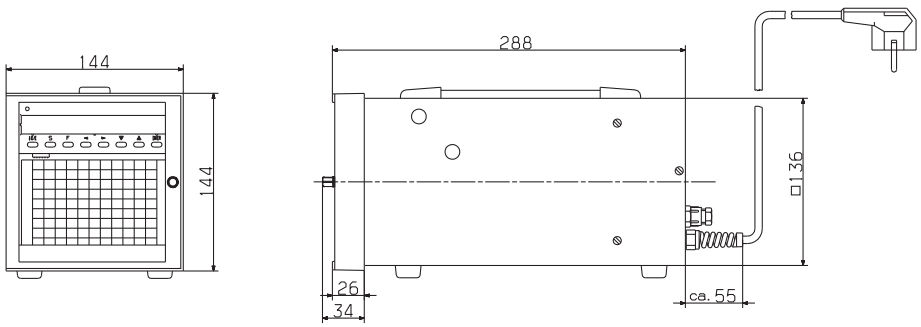
Panel-mounting housing



Extra code 350
Portable recorder housing for varying applications in mobile use



Extra code 351
Housing with carrying handle, rubber feet and terminal cover, also 3m mains cable with earthed plug



Order matrix:

			(1)	**Basic version**
		706030/14		LOGOPRINT 500 with 3 universal inputs
		706030/15		LOGOPRINT 500 with 6 universal inputs
			(2)	**Inputs 1 — 3 (programmable)**
x	x	888		factory-set
x	x	999		configuration to customer specification[1]
			(3)	**Inputs 4 — 6 (programmable)**
x		000		not assigned
	x	888		factory-set
	x	999		configuration to customer specification[1]
			(4)	**Interface**
x	x	00		not assigned
x	x	52		RS422, Jbus, Modbus
x	x	53		RS485, Jbus, Modbus
			(5)	**Supply**
x	x	22		20 — 53V AC/DC +0/-0% 48 — 63Hz
x	x	23		110 — 240V AC +10/-15% 48 — 63Hz
			(6)	**Extra codes**
x	x	020		lithium battery for RAM buffer (ex-factory)
x	x	021		storage capacitor for RAM buffer (on request)
x	x	030		terminal with shunt (6 items)
x	x	259		8 logic inputs, interface for external relay module (ER8), voltage output 24V 50mA DC
x	x	266		IP65 seal, wide fixing brackets
x	x	350		universal carrying case TG-35[2]
x	x	351		housing with carrying handle[3]

	(1)		(2)		(3)		(4)		(5)		(6)	
Order code		-		-		-		-		/		, ...[4]
Order example	706030/14	-	888	-	000	-	00	-	23	/	020	

[1] Please specify probe types and measurement ranges in plain text.
[2] This extra code is available in combination with supply voltage 110—240V AC, not with low supply voltage. UL approval is not available. The protection type in the carrying case corresponds to IP20, outside IP20D.
[3] UL approval is not available.
[4] Extra codes are listed in sequence and separated by a comma.

Standard accessories

- 1 Operating Instructions
- 2 mounting brackets
- cable-tie with foot (can be released), for tension relief of the sensor leads connected
- 1 print head, 3 colors (each color is available twice) or 1 print head, 6 colors
- 1 roll chart 32m long and 1 fanfold chart pack 15.6m long

Accessories (Data Sheet 709700)

- For further accessories, see data sheet 709700.

Consumables

	Part no.
- Roll chart (5 rolls), no name, % graduation, linear; overall length 16m, overall width 120mm	00331497
- Roll chart (5 rolls), no name, % graduation, linear; overall length 32m, overall width 120mm	00331499
- Roll chart (5 rolls), no name, special graduation, linear; marked as specified	-
- Fanfold chart (5 packs), no name, % graduation, linear; overall length 15.6m, overall width 120mm	00331490
- Fanfold chart (5 packs), no name, special graduation, linear; marked as specified	-
- Print head (2 items), 3 colors	00355244
- Print head (2 items), 6 colors	00355255