



NOVÁ PAKA

PRODUCT MANUAL

Digital recorder ZEPAREX 559

type 559

APPLICATION

- For remote measurement and recording of up to twelve physical quantities of various ranges, as an alternative to recorders with recording paper, e.g. for displaying a record of data during water treatment, thermal processing and process technology, or as equipment for tests of resistance to surrounding effects.

Digital recorders are rated products pursuant to the Act No. 22/1997 Coll. and a Declaration of Conformity EC-559000 is issued for them.

EXAMPLES OF APPLICATION:

Displaying/recording data from waste water cleaning

- It displays and records data from inputs, e.g. temperature, flow, cloud, pH, dissolved oxygen
- It enables
 - simple data analysis on a PC
 - water quality control with option Pt 1000 (/N3), display of temperature with high resolution
 - Impulse measurement to 100 Hz with selection of impulse inputs (/PM1), displaying/recording calculations like flow accumulation

Example:

Displaying/recording technological procedure (F1-F2)

Displaying accumulation of flow on channel 31

Consumed flow (F1)

Measurement: temperature/flow/cloud/pH/dissolved oxygen

Outflow (F2): channel 02

Sedimentation tank

Outlet chamber

Displaying/recording data from monitoring of aluminium casting

- It displays and records data about aluminium casting
 - temperature of melted metal
 - temperature of cooling water
- In case of an alarm, it archives the following data
 - analysis of alarm data
 - record of furnace data
 - temperature of melted metal
 - temperature of cooling water
 - melting furnace
 - mould for metal

Displaying/recording data for food sterilization

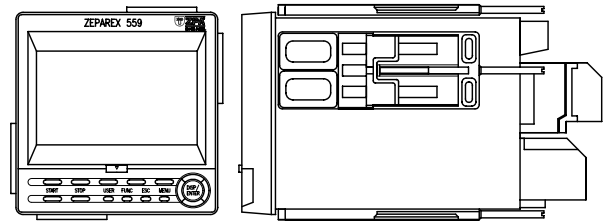
- It records the sterilization procedure with an optional mathematic function (M1)
- Easy calculation F0, F0 is a sum of surface
- Analysis of printout
- Simple data conversion to Excel format
- Multi-point recording, also with various types of inputs (temperature, F0, pressure, etc.)
- It improves efficiency by electric recording
- Measurement switching on/off with external input (optional)
- Saving files by each test

Displaying/recording data in chamber for monitoring the surrounding effects

- It measures accurately data of the test in the chamber for monitoring surrounding effects and displays them on universal screen
- It records data (temperature, humidity, voltage, current)
- Universal displaying enables simple data interpretation
- Simple data analyzing with compute software

Remote monitoring for water distribution

- Available simple data acquisition in a wide area of the network by means of an optional communication port Ethernet (/C7)
- Efficient data administration, data monitoring through a wide area of the network
- No external carries can be selected (it decreases TCO), data file is saved on FTP server
- Data monitoring in real time in remote places
- Warning by e-mail in case of alarm occurrence
- It produces a printout regularly (/M1)



DESCRIPTION

On a colour screen, the digital recorder displays the measurement data in real time and saves the data on external carriers (floppy disk 3.5" or flash card Flash) or on the server. It is realized with three, six or twelve channels. Direct current voltage, thermocouple, resistance temperature sensing probe and bi-value signal (contact switching or voltage signal) can be adjusted as the input signal for each channel.

Measured data can be clearly seen on universal displays down as well as in the field. Contrary to the data from recorders with registration paper, electronically saved data can be archived and copied safely, quickly and simply, without occupying space.

TECHNICAL DATA

The sensor is designed pursuant to ČSN EN 61140 ed. 2 as an electrical equipment of protection class I for the application in network with the category of overvoltage in the installation II and pollution grade 2 pursuant to ČSN EN 61010-1; the follow-up (evaluation) device shall comply with Article 6.3 of the said standard.

Measuring range: pursuant to the input signal

- Electrical strength** pursuant to ČSN EN 61010-1 Article 6.8.4
- Power supply circuit against device frame (external terminal PE): 2300 V AC (50/60 Hz), 1 min
 - Contact output terminals against device frame (external terminal PE): 1600 V AC (50/60 Hz), 1 min
 - Input terminals against device frame (external terminal PE): 1500 V AC (50/60 Hz), 1 min
 - Between input terminals: 1000 V AC (50/60 Hz), 1 min (with the exception of terminal b of non-insulated inlet of measuring resistor)
 - Terminals of remote control against device frame (external terminal PE): 1000 V DC, 1 min
 - Terminals of impulse input against device frame (external terminal PE): 1000 V DC, 1 min

Electrical insulation resistance pursuant to ČSN 34 5611: min. 20 M

Power input: max. 35 VA

Characteristics of relay contact:

DC 250 V/0.1 A (for resistance load) AC 250 V 50/60 Hz 3 A

Ingress protection of front panel pursuant to ČSN EN 60529: IP 65

Rear terminal board IP 10
Power supply terminals IP 40

Operation position pursuant to ČSN EN 60051-1: D1

Type of operation: continuous

Weight:

559xx0	approx. 2.2 kg
559xx1	approx. 2.5 kg
559xx4	approx. 2.3 kg

Applied materials:

Box painted steel
Cover plastic material

Type of connecting terminals:

Screw type; for wires 0.2 to 2.5 mm²

Indication of thermocouple tripping:

The function of thermocouple tripping can be switched on/off for each channel

For thermocouple tripping, it is possible to select a signal above/below the scale

- Normal conditions – below 2 k
- Tripping – over 100 k

Filtration function:

- 55903
 - For each channel, it is possible to select switched on/off
 - Time constant - it is possible to choose 2.5 and 10 s
- 55906, 55912
 - Flexible average is selectable for each channel
 - Number of values, from which this average is calculated, can be chosen from 2 to 16

Calculation:

- Mathematic operations within selected mathematic functions – code /M1

DISPLAYING

Displaying equipment:

TFT colour monitor LCD with diagonal 5.5 inches (320 x 240 pixels)

Optional length of record on the screen:

- 55903: 15, 30 s 1, 2, 5, 10, 15, 20, 30 min 1, 2, 4, 10 hours – to be selected by the enquiry system
- 55906, 55912: 1, 2, 5, 10, 15, 20, 30 min 1, 2, 4, 10 hours – to be selected by the enquiry system

Function of LCD bright saver:

It is decreased automatically if no key is selected for a certain pre-selected time

Value of saver set-up:

1, 2, 5, 10, 30 or 60 min

Unit of temperature: it is possible to choose °C or °F

Language: English

DATA SAVING FUNCTION

Internal memory: flash memory 1.2 M

External data carrier: it is possible to choose

- None
- Floppy disk 3.5 inches (2HD, 1.44 MB)
- Fixed memory card (32 to 512 MB)

Type of saving: it is possible to choose manual or automatic

Measured data files:

- Data for displaying
- Data of events

Interval of data saving:

- File of data to be displayed – it is connected with length of record on the screen
- File of events – data saving in link to set-up parameter, e.g. value measurement, command via keyboard or on the network

Interval of provision of selection of file of events:

- 55903: it is possible to choose from 250, 500 ms and 1, 2, 5, 10, 30, 60, 120, 300, 600 s
- 55906, 55912: it is possible to choose from 1, 2, 5, 10, 30, 60, 120, 300, 600 s

ALARM FUNCTIONS

Number of alarm levels: up to four levels for each signal

Types of alarm:

- Upper and lower limits
- Upper and lower limits with delay
- Upper and lower limits of difference
- Upper and lower limits of speed of changes

Time of interval for alarms initiated by speed of changes:

Times of intervals measurement 1 to 15

Displaying:

The status (type) of alarm is displayed at the alarm occurrence on the display surface in numerical form; common data for alarm are also displayed

Course of alarm:

For all channels, it is possible to select the mode of delay and without delay (it delays displaying of the alarm unless acquittance is made)

Hysteresis:

It is possible to choose switched on (0.5% of display range) / switched off (together for all channels and alarm levels)

Outputs:

Number of places 2, 4 or 6 places (optional)

Relay activity:

When alarm occurs, it is possible to choose relay - switched on / not switched on

Memory:

In the memory there are saved times of occurrence of alarm / restoration after alarm, types of alarm, etc. (up to 120 last alarm events are saved)

OTHER SPECIFICATIONS

Watches: with calendar function (year of this era), time can be adjusted by option of remote control

Summer/winter time:

It is possible to set-up summer or winter time

Accuracy hours:

± 100 ppm, with the exception of deviation max. 1 s caused by switching on

Memory content back-up:

Built-in lithium battery backs up set-up parameters, battery service life at room temperature approximately 10 years

Function of key blocking:

It is possible to set-up switched on/off and password

Function of log-in:

Switching on with the mode of cancellation of log-in and none of the activities of the keys is permitted for entry to the operation mode, user name, user identification and password are required

It is possible to set-up blocking keys with a password to disable a change of set-up

OPERATION CONDITIONS

The environment is defined by the group of parameters and their severity grades IE 36 pursuant to ČSN EN 60721-3-3 and the following operation conditions.

Ambient temperature:

0 to 50 °C (when using a floppy disk 0 to 40°C)

Relative ambient humidity:

- 20 to 80 % with upper limit of water content of 29 g H₂O/kg of dry air at 0 to 40°C
- 10 to 50 % with upper limit of water content of 29 g H₂O/kg of dry air at 40 to 50°C

Atmospheric pressure: 70 to 106 kPa

Vibrations: Frequency range [Hz] 10 to 60
Acceleration amplitude [ms⁻²] 0.2

Power supply:

Voltage: AC 230 V + 10 % - 15 %
(alternatively DC/AC 24 V – code /P1)

Frequency: 48 to 62 Hz

Coefficient of upper harmonics: max. 10 %

Electromagnetic compatibility pursuant to ČSN EN 61326-1:

Resistance to external magnetic and electric fields:
max. 400 A/m

Limit values of interfering voltage on mains terminals:
class A pursuant to ČSN EN 55011

Limits for emissions of harmonic current:
pursuant to ČSN EN 61000-3-2 ed. 2

Limitation of voltage changes, voltage fluctuation:
pursuant to ČSN EN 61000-3-3

Settlement period: 30 minutes

METROLOGICAL DATA

Measuring body:

- 55903 3 channels
- 55906 6 channels
- 55912 12 channels

Interval measurement:

- 55903 250 ms
- 55906 a 55912 1 s, 2 s

Input signal:

- Direct current voltage (DCV) refer to table 1
- Thermocouple (TC) refer to table 1
- Measuring resistor (RTD) refer to table 1
- Digital input (DI):

Bi-value signal 0: < 2.4 V 1: > 2.4 V

Contact 0: switching off, 1: switching on

- Direct current (DCA) – with connected external by-pass resistor)

Accuracy measurement:

For basic measurement ranges – refer to table 1

Accuracy of measurement in case of scbut recalculation:

Accuracy measurement (digits) x multiplier + 2 digits multiplier = span of scbut recalculation (digits) / measuring span (digits)
 Decimal places are rounded to the closest higher number

Compensation of comparison ends:

It is possible to choose INT (internal)/EXT (external) shared for all channels

Accuracy compensation of comparison ends:

(balanced with temperature of input terminals above 0°C, more than 60 minutes after connection)

Thermocouple R, S, B	± 1.0°C
K, J, E, T, N, L, U	± 0.5°C

Internal compensation of comparison ends for thermocouple B is fixed to 0°C

Maximum permissible input voltage:

- For ranges below DC 200 mV and ranges of thermocouples, measuring resistors and digital input DC ± 10 V (permanent)
- For other than aforesaid ranges (DC 2, 6, 20, 50 V) DC ± 60 V (permanent)

Input resistance:

- Approximately 10 M or more for ranges to DC 200 mV and TC
- Approximately 1 M for ranges above DC 2 V

Internal resistance of connected circuit:

- DC V, TC 2k or less
- RTD for wire 10 or less (resistance of all three wires shall be the same)

Parallel capacity of measuring resistor:

0.01 F or less

Input idle current:

10 nA or less

Maximum concurrent noise voltage:

AC 250 V rms (50/60 Hz)

Maximum noise voltage between channels:

AC 250 V rms (50/60 Hz)

Interference between channels:

120 dB (internal input resistance 500 , inputs to other channels 30 V)

Level of suppression of the sum signal:

120 dB (50/60 Hz ± 0.1%, imbalance 500 between negative terminal and ground terminal)

Symmetrical noise voltage:

40 dB (50/60 Hz 0.1%)

IMPACT OF OPERATION CONDITIONS**Ambient temperature:** with temperature deviation 10°C

- For range DCV and TC ± 0.1% of read value (rdg) + 1 digit or less
- For inputs RTD ± 0.1% of read value (rdg) + 2 digits or less

Power supply:

Voltage with deviation between AC 180 to 250 V 50/60 Hz ± 1 digit or less

External magnetic and electric fields:

AC 50/60 Hz and DC 400 A/m ± 0.1% of read value (rdg) + 10 digits or less

Internal resistance of connected circuit (with deviation + 1 k):

- Range DCV
 - Ranges 200 mV or less do ± 10 V
 - Ranges 2 V or higher approximately ± 0.1 % of read value (rdg)
- Range TC to ± 10 V (to ± 100 V if the function of interruption above / below the scale value is switched on)
- Range of measuring resistor Pt 100 with deviation 10 per wire (resistance of all three wires shall be equal) ± 0.1% of read value (rdg) + 1 digit with maximum difference 40 m between wires approximately 0.1°C

TABLE 1

Input signal		Range measurement	Accuracy measurement (of digital displaying)	Max. resolution of digital displaying	
Direct current voltage (DC V)	20 mV	-20.00 to 20.00 mV	± 0.1% from rdg + 2 digits	10 V	
	60 mV	-60.00 to 60.00 mV		100 V	
	200 mV	-200.00 to 200.00 mV		1 mV	
	2 V	-2.000 to 2.000 V		± 0.1% from rdg + 3 digits	10 mV
	6 V	-6.000 to 6.000 V			
	20 V	-20.00 to 20.00 V			
	50 V	-50.00 to 50.00 V			
Thermocouple (TC) pursuant to ČSN EN 60584-1	R	0.0 to 1760.0 °C	± 0.15% from rdg + 1°C but R, S ± 3.7°C at 0 to 100°C ± 1.5°C at 100 to 300°C B ± 2°C at 400 to 600°C accuracy is not guaranteed at below 400°C	0.1°C	
	S	0.0 to 1760.0 °C			
	B	0.0 to 1820.0 °C			
	K	-200.0 to 1370.0 °C			
	E	-200.0 to 800.0 °C			
	J	-200.0 to 1100.0 °C			
	T	200.0 to 400.0 °C			
Thermocouple (TC) pursuant to DIN 43710	L (Fe-CuNi)	-200.0 to 900.0 °C	± 0.15% from rdg + 0.5°C but ± 0.15% from rdg + 0.7°C at -200 to -100°C		
	U (Cu-CuNi)	-200.0 to 400.0 °C			
Measuring resistor (RTD) pursuant to ČSN IEC 751	Pt 100	-200.0 to 600.0 °C	± 0.15% from rdg + 0.3°C		
Measuring resistor (RTD) *), measuring current 0.16 mA	Pt 1000	-200.0 to 600.0 °C	± 0.2% from rdg + 0.4°C		
Digital input (DI)	Direct current voltage (DC V)	0: < 2.4 V 1: > 2.4 V	± 0.1 V		
	Contact input	0: OFF 1: ON	≤ 1 k ≥ 100 k (parallel capacity ≤ 0.01 F)		
Direct current (DC A) with connected external by-pass resistor	250 ±0.1%	20 mA			
	100 ±0.1%				
	10 ±0.1%				

rdg = read value

*) Optional configuration

Accuracy measurement and records are related to operation conditions, but up to temperature 23°C ± 2°C and humidity 55% ± 10 % with upper limit of water content of 29 g H₂O/kg of dry air

DESIGNATION:**Data on label of cover**

- Trademark of the manufacturer
- Made in Czech Republic
- Type and size of supply voltage, max. power input
- Product ordering number
- Ingress protection
- Manufacturing number
- CE mark

User manual for ZEPAREX 559, User manual for communication interface of ZEPAREX 559, User manual DAQSTANDARD (CD-ROM)

Application software equipment DAQSTANDARD (CD-ROM), it is not delivered for design with no communication port and external memory

If it is established in the purchase contract or agreed otherwise, the following documentation may be also delivered with the product

- EC Declaration of Conformity

DELIVERY

Unless agreed otherwise with the customer, each delivery includes

- Delivery note
- Digital recorder pursuant to the purchase order
- Standard accessories
 - Connecting holder 2 pcs
 - Screw of rear terminal board 3 pcs
 - Memory card 32 MB 1 pc
(only for design 559xx4)
- Optional accessories pursuant to table 4
 - By-pass resistance (it shall be ordered for measurement of direct current)
 - Memory card
 - Connecting holder
- Accompanying technical documentation in Czech
 - Product quality and completeness certificate, which also serves as the warranty certificate
 - Product manual
 - Operation manual

PACKING

Both the devices and accessories are delivered in a packing ensuring resistance to the impact of temperature effects and mechanical effects pursuant to controlled packing regulations.

TRANSPORT

The devices may be transported on conditions corresponding to the set of combinations of classes IE 21 pursuant to ČSN EN 60721-3-2 (i.e. by airplanes and trucks, in premises that are ventilated and protected against atmospheric conditions).

STORAGE

The devices may be stored on conditions corresponding to the set of combinations of classes IE 11 pursuant to ČSN EN 60721-3-1 (i.e. in places with uninterrupted temperature control from 5 to 40 °C and with humidity from 5 to 85%, without a special threat of an attack with biological agents, with

vibrations of small significance and not situated close to sources of dust and sand.)

PURCHASE ORDER EXAMPLE

Standard design:

Digital recorder ZEPAREX 559

5590300/A1/C2/M1

1 pc

ORDERING OF RECORDERS

The purchase order shall specify

- Name
- Product ordering number
- If optional accessories are required
- Number of pieces

TABLE 2 - DESIGN OF RECORDER, TYPE 559

SPECIFICATIONS		ORDERING NUMBER					
		559	xx	x	x	/xx	
Design (number of inputs)	3 channels		03				
	6 channels		06				
	12 channels		12				
External memory	None			0			
	Floppy disk (3.5", 1.44 MB)			1			
	Compact memory card (32 MB)			4			
Language of display	English				2		
Optional configuration	Number of places of alarm output *)	2 places				/A1	
		4 places				/A2	
		6 places					/A3
	Communication interface	RS-232 (including the function of Master / Slave protocol Modbus **)					/C2
		RS-422-A/485 (including the function of Master / Slave protocol Modbus **)					/C3
		Ethernet (10 BASE-T)					/C7
	System alarm with output via relay ***)						/F1
	Mathematical function (with function of messages)						/M1
	Insulated measuring resistor in three-wire connection						/N2
	Input Pt 1000						/N3
Supply voltage DC/AC 24 V						/P1	
3 places of impulse input, 5 places of control (including mathematical function ****)						/PM1	
8 places of remote control						/R1	

*) /A1, /A2 and /A3 cannot be specified together

**) /C2 and /C3 cannot be specified together; if Modbus function is used, /M1 or /PM1 shall be specified.

***) If /F1 is specified, /A3 cannot be specified

****) If /PM1 is specified, each of /A3, R1 or /M1 cannot be specified, /A2 and /F1 cannot be specified together

TABLE 3 – APPLICATION SOFTWARE EQUIPMENT

DESCRIPTION	OPERATION SYSTEM	CODE
DAQSTANDARD (it is not delivered for the design without any communication port and external memory)	Windows 98/Me/NT4.0/2000/XP	ZEP559-01

TABLE 4 – OPTIONAL ACCESSORIES

DESCRIPTION	SPECIFICATIONS	DESIGN	ORDERING NUMBER
By-pass resistance (terminal module) (it shall be ordered for measurement of direct current)	250 ±0.1%	4389 20	ZEP 559 R 20
	100 ±0.1%	4389 21	ZEP 559 R 21
	10 ±0.1%	4389 22	ZEP 559 R 22
Memory card	32 MB		ZEP 559 CF 1
	64 MB		ZEP 559 CF 2
	128 MB		ZEP 559 CF 3
	256 MB		ZEP 559 CF 4
	512 MB		ZEP 559 CF 5
Connecting holder		B9900BX	ZEP 559 DR

SPECIFICATIONS OF OPTIONAL CONFIGURATIONS

OUTPUT RELAY OF ALARM (/A1, /A2, /A3):

- Number of outputs 2, 4, 6 places
- Alarm signal has an output from the rear panel as a signal of relay contact

Configuration of output:

SPDT/NO-C-NC

It is possible to choose logic of switching on and delay

SERIAL COMMUNICATION INTERFACE (/C2, /C3)

It enables the main computer to control the recorder and realize the set-up and also receive data from the recorder

Connection:

EIA RS-232 (/C2) or RS-422-A/485 (C3)

Protocols: protocol Modbus

Type of synchronization:

asynchronous transmission in mode start/stop

Type of connection:

4-wire semi-duplex multi-point connection 1 : N, where N = 1 to 32

Transmission speed:

1200, 2400, 4800, 9600, 19200 or 38400 b/s

Data length: 7 or 8 bits
Stop bit: 1 bit
Parity: odd, even or none
Communication distance (RS-422-A/485): to 1.2 km

Communication mode:
 - ASCII for input/output control and set-up
 - ASCII or binary for output of measured data

Communication Modbus:
 Operation mode RTU MASTER or RTU SLAVE
 (master RTU or slave RTU)

ETHERNET COMMUNICATION (/C7)

Connection: Ethernet (10BASE-T)

Protocols: SMTP, HTTP1., FTP, TCP, UDP, IP, ARP, ICMP

Function of informing by e-mail:

- Types of informing:
for each group optional: to inform/not to inform
- Alarm information:
It informs, when alarm occurs / alarm is cancelled
- Information about the system:
It informs in case of power supply failure / it informs about restoration period, notified the time till rewriting the memory internal (manual mode of saving), it announces the rest of capacity of the memory carriers when achieving the status of 90% fill-up (automatic mode of saving)
- Information in planned time:
It informs about the immediate value in a specific time or interval
- Information about the message:
It announces the data of the printout at expiration of time for the message

Function of web server:

- It displays the picture with the browser; it informs about the alarm and immediate values of the recorder screen
- It enables to enter messages from the browser screen

Function of FTP customer:

Automatic transmission of file from the recorder (data file displaying, file of events, printout file and photo)

Function of FTP server:

Manual transmission of the file from slave computer to external carriers, activity of directory, information about file cancellation and rest of memory in the carriers

Function of real time monitoring:

Monitoring data from recorder in real time with the use of communication

SYSTEM ALARM WITH OUTPUT THROUGH RELAY (/F1)

Output with a relay contact in the following cases

System error:

Relay output at occurrence of system alarm

Manual mode of saving:

Relay output before the pre-set time of overwriting the internal memory, it is possible to choose between 1, 2, 5, 10, 20, 50 or 100 hours

Automatic mode of storage:

Relay output at achieving 90 % of filled-up volume of memory carriers

MATHEMATICAL FUNCTION (/M1)

It displays and records calculated data assigned to channels

Number of channels, to which data can be assigned:

Up to 12 channels

Type of calculation:

- Main arithmetic functions
 - four arithmetic operations
 - square root
 - absolute value
 - natural logarithm
 - power
 - relation operation (<, >, =,)
 - logical operations (AND, OR, NOT, exclusive logical sum)
- Statistical operations
 - average
 - maximum
 - minimum

summarization

Calculation of long-term floating average:

It is made on the basis of results of the calculations

Constant: available (to 30 constants)

Input of digital data through communication:

In mathematical expressions, it is possible to use the status of remote input (0/1) (up to 8 inputs)

Function of messages:

Type of messages

- hour
- daily
- hour + daily
- daily + weekly
- daily + monthly

Type of calculation:

- average
- maximum
- minimum
- summarization

Data format: ASCII

INSULATED INPUT OF THE RESISTANCE SENSOR PT100 IN THREE-WIRE CONNECTION (/N2)

Branches A, B, b are of the type with insulated input /N2 can only be specified for 55906 and 55912, branches A, B, b for 55903 are insulated as a default

INPUT PT1000 (/N3)

Measurement ranges, accuracy of measurement and resolution of digital displaying

MATHEMATICAL FUNCTION OF IMPULSE INPUT (PM1)

Number of inputs:

3 places (there are 8 available places in case of remote inputs)

Maximum period of sampling impulse: max. 100 Hz

Minimum length of impulse: 5 ms

Permissible input voltage: DC 30 V

Accuracy of impulse measurement:

± 1 impulse (for immediate mode)

Measurement mode:

Set-up of immediate mode:

calculation of impulses during the period of existence of the measurement

Set-up of summarization mode:

summarization of calculation of impulses with the use of the mathematical function (TLOG.SUM)

REMOTE CONTROL (/R1)

Number of remote inputs: 8 places

This option enables to control the following eight functions with the use of a contact input

- Initiation / stoppage of memory (level)
 - Actuation for file of events (actuation, 250 ms or longer)
 - Time adjustment (time set-up to previously set-up time at contact signal, actuation, 250 ms or longer)
 - Initiation / stoppage of calculation (level)
 - Resetting calculated data (actuation, 250 ms or longer)
 - Manual data selection (actuation, 250 ms or longer)
 - Report displaying (it is possible to set-up to 8 different messages, actuation, 250 ms or longer)
 - Implementation of set-up parameters *) (it is possible to set-up up to 3 set-ups, actuation, 250 ms or longer, with the exception of design without carriers)
 - Alarm confirmation (actuation, 250 ms or longer)
 - Picture (actuation, 250 ms or longer)
- *) implementation of set-up parameters is not available for design without carriers

POWER SUPPLY DC/AC 24 V (/P1)

Voltage:

- DC 24 V
- AC 24 V (48 to 62 Hz)

Permissible voltage range:

- DC/AC 21.6 to 26.4 V

Electrical strength pursuant to ČSN EN 61010-1 Article 6.8.4

- Power supply circuit against device frame (external terminal PE): 500 V AC (50/60 Hz), 1 min

Power input:

- For DC 24 V max. 17 VA
- For AC 24 V max. 30 VA

**APPLICATION SOFTWARE
EQUIPMENT
DAQ STANDARD**

Operation platform:

Operation system Microsoft Windows 98 / Me / NT4.0 / 2000 / XP

Basic function (programme sets):

Configuration software:

external memory carrier: system configuration and set-up mode

Configuration through communication:

configuration of the system and set-up mode without configuration communication (external address)

Data browser:

Number of channel displays:

32 channels for each group; max. 30 groups

Display function

- Display of shape development
- Digital displaying
- Cyclical displaying
- List displaying
- TLOG displaying
- Message displaying

Display of file connecting:

It connects data files, which are divided by automatic staving during data measurement or power failure (it can connect up to one million)

Calculation of parts:

- Maximum value
- Minimum value
- Average value
- Effective value
- Percentage value

Data conversion:

File conversion into format ASCII, Lotus 1-2-3 or MS-Excel

Print: it prints the called data

Several units installed

closely vertically (up to 3 units)

The electrical connection may be only realized by qualified workers pursuant to § 5 of the Decree 50/1978 Coll.

Layout of rear panel terminals – refer to figure 3.

Other descriptions of the connection and commissioning are identified in the operation manual, which forms a part of the delivery.

COMMISSIONING

After the installation of the recorder into the panel, connection of the follow-up (evaluation) device to the supply voltage and the settlement period of the converter, the equipment is prepared for operation.

OPERATION AND MAINTENANCE

The operation shall be performed pursuant to the operation manual.

SPARE PARTS

Spare parts are not delivered by the manufacturer.

WARRANTY

Pursuant to § 429 of the Commercial Code and the provisions of § 620 (2) of the Civil Code, the manufacturer warrants for technical and operation parameters of the product specified in the manual. The warranty period is 24 months from the receiving of the product by the customer, unless established otherwise in the contract. The rejection of defects shall be enforced in writing at the manufacturer within the warranty period. The rejecting side shall identify the product name, ordering and manufacturing numbers, date of issue and number of the delivery note, clear description of the occurring defect and the subject of the claim. If the rejecting side is invited to send the device for repair, it shall do so in the original package of the manufacturer and/or in another package ensuring safe transport.

The warranty shall not apply to defects caused by unauthorized intervention into the device, its forced mechanical damage or failure to comply with operation conditions of the product and the product manual.

REPAIRS

The devices shall be repaired by the manufacturer. They shall be sent for repair in the original packing without accessories.

DISABLING AND LIQUIDATION

They shall be realized in compliance with the Waste Act No. 106/2005 Coll.

Both the product and its package do not include any parts that could impact the environment.

Products that are withdrawn from operation, including their packages (with the exception of products marked as electrical equipment for the purposes of return withdrawal and selected salvage of electrical waste), may be disposed of to the sorted or unsorted waste pursuant to the type of waste.

The manufacturer realizes free return withdrawal of marked electrical equipment (from 13.8.2005) from the consumer and points out the danger connected with their illegal disposal. The package of the sensor can be recycled completely. Metal parts of the products are recycled, non-recyclable plastic materials and electrical waste shall be disposed of in compliance with the aforesaid Act.

INSTALLATION AND CONNECTION

The device shall be connected into the panel from a steel metal with thickness 2 to 26 mm with two holders pursuant to the following figure.

Install the holders on the device cover on the top and bottom or on the left and right (after removing seals covering the holes for holders).

Adequate torque for tightening screws for the installation of holders in the panel is 0.8 to 1.2 Nm.

Tightening screws with torque exceeding the adequate torque can result in a deformation of a cover or damage to a holder.

SCHEME OF CUT-OUTS IN THE PANEL

One unit Several units installed closely vertically

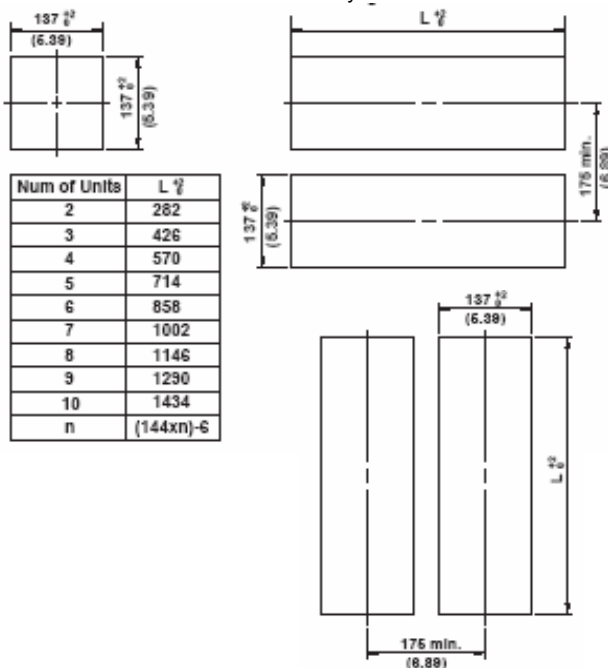


FIGURE 1 – DIMENSIONAL DRAWING

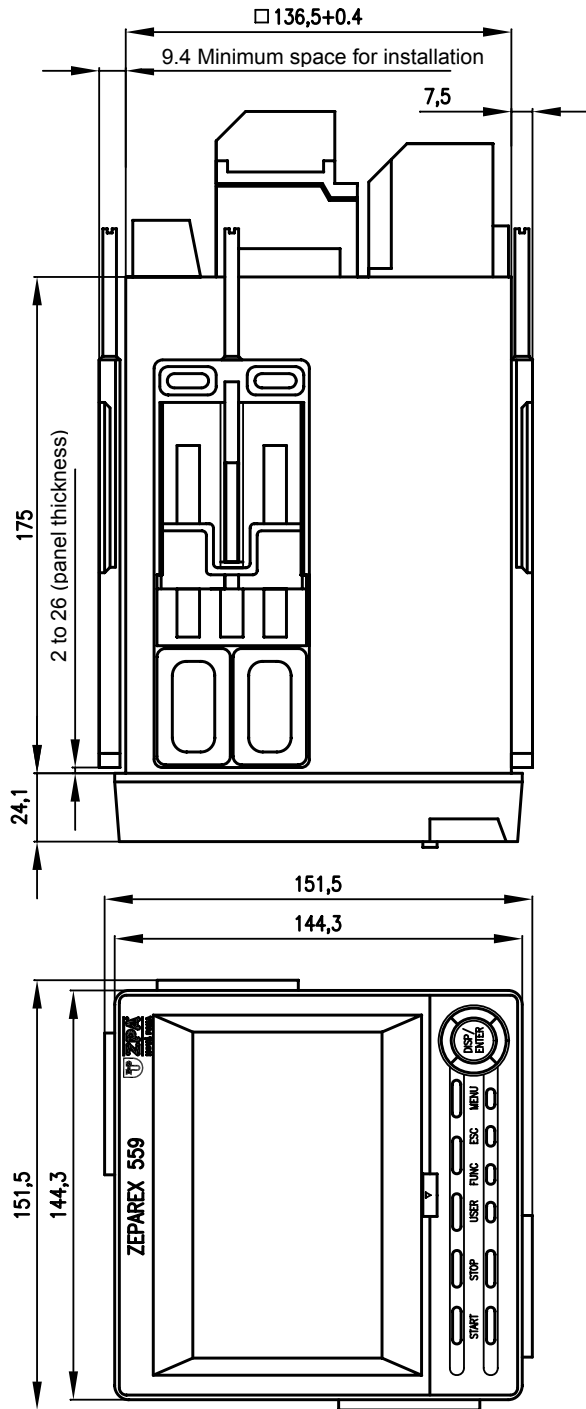


FIGURE 2 – VIEW OF REAR TERMINAL BOARD

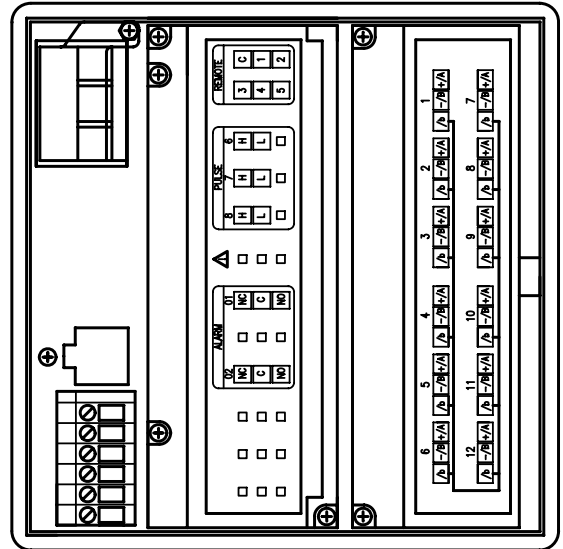
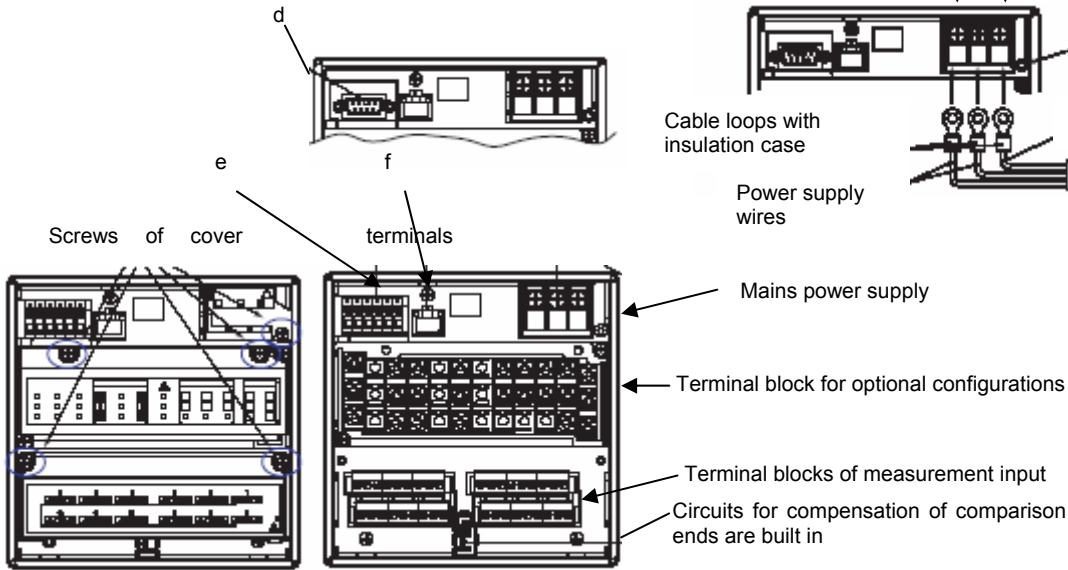
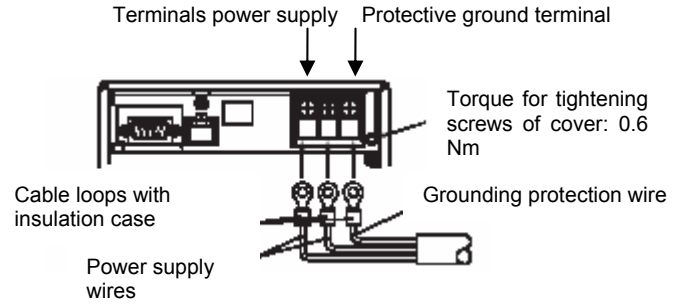


FIGURE 3 – LAYOUT AND CONNECTION OF TERMINALS OF REAR PANEL

Communication ports:

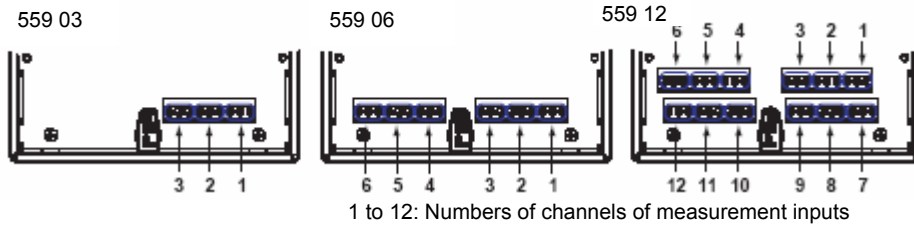
- d) Port of serial interface RS-232 (only if it is specified)
- e) Port of serial interface RS-422A/485 (only if it is specified)
- f) Ethernet port 10BASE-T (only if it is specified)

Mains power supply:



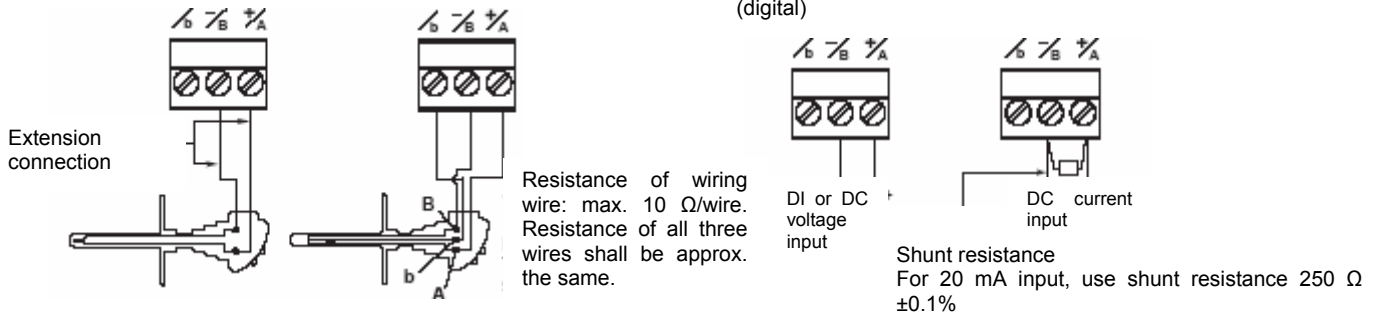
LAYOUT OF TERMINALS OF MEASUREMENT INPUT

One measurement input to the terminal block of measurement input uses three terminals.



ASSIGNMENT OF TERMINALS

Input thermocouple Input of resistance temperature sensor Input of DI or DC voltage (digital) Input of DC current



Note

On the standard terminal block of measurement input, the terminals A and B of RTD input are insulated on each channel. The terminal b is short interconnected across all channels. If you identified the option of insulated RTD with three terminals (/N2), terminals b are mutually insulated.

LAYOUT OF TERMINALS FOR OPTIONAL CONFIGURATION

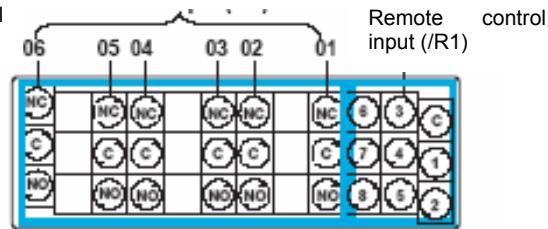
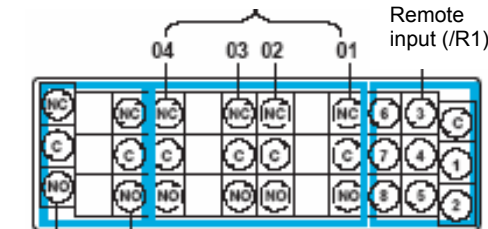
The terminal block for optional configuration includes all options, e.g.: relay of alarm output (option codes: /A1, /A2 and /A3), output for indication of system failure / full memory (option code: /F1), remote control (option code: /R1) and input of impulse measurement (option code: /PM1).

The terminals are arranged pursuant to installed optional possibilities. It is only possible to use such terminals that correspond to the selected design.

Without impulse input (/PM1)

Alarm output
/A1: only 01 and 02
/A2: 01 to 04

Alarm output (/A3)

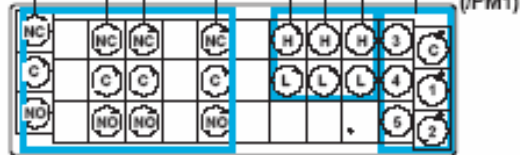
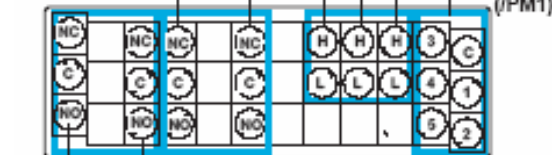


Indication of system failure
Indication of full memory
/F1

With impulse input (/PM1)

Alarm output (/A1)
Impulse input (/PM1)
Remote control input (/R1)

Alarm output (/A2)
Impulse input (/PM1)
Remote control input (/R1)



Indication of system failure
Indication of full memory
/F1

Relay contact output terminals: NC (normally connected), C (common), NO (normally interrupted)
Remote control terminal: 1 to 8, C (common)
Impulse input terminals H, L

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ZPA Nová Paka, a.s.



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