DR4000

- Serial Communication Protocol –

EN

invensys
Controls

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1 MODBUS FUNCTIONS AND RESOURCES

The TTL serial - referred to also as COM1 – can be used to configure the device, parameters, states, and variables using the Modbus protocol.

DEVICE CONFIGURATION PARAMETERS			
Parameter	***Description***	**Value**	***Range***
PtS	Protocol selection	t	t=Televis d=modbus
dEA	Device address	0	0...14
FAA	Family address	0	0...14
PtY	Modbus parity bit (none, Even, odd)	E	n=none, E=Even, o=odd
Stp	Setting stop bit (1b,2b)	1b	1b 2b
Note: If parameters **PtS, PtY** and **Stp** are changed, the controller must be turned off and then on again after they are changed to operate correctly.			

See the following table:

1.1 Configuration with Modbus RTU

Modbus is a client/server protocol for communication between network linked devices.
Modbus devices communicate using a master-slave technique in which a single device (the master) can send messages. All other devices in the network (slaves) respond by returning the data required to the master or executing the action indicated in the message received. A slave is defined as a device connected to a network that processes information and sends the results to a master using the Modbus protocol.
The master can send messages to individual slaves or to the entire network (broadcast) whilst slaves can only reply to messages received individually from the master.
The Modbus standard used by Eliwell uses RTU coding for data transmission.

1.1.1 Data format (RTU)

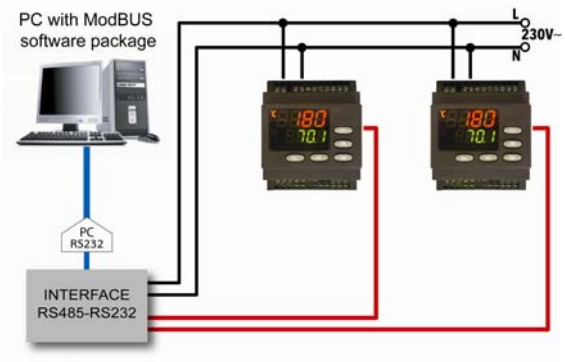
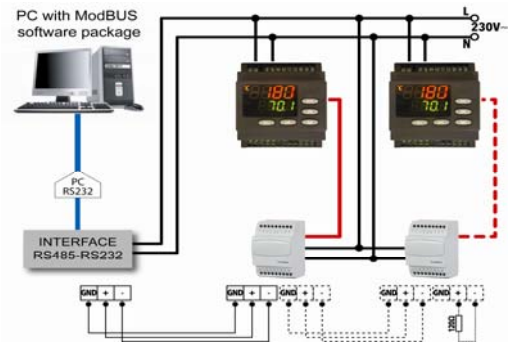
The data coding model used defines the structure of messages sent to the network and the way in which the information is decoded. The type of coding selected is generally based on specific parameters (baud rate, parity, etc)*** and some devices only support specific code models. However, the same model must be used for all devices connected to a Modbus network.
The protocol uses the RTU binary method with the following bytes:
8 data bits, configurable parity bit (see parameter **PtY**, *default* value= Even),
1 configurable stop bit (see parameter **StP**, *default* value = 1b)

NOTE: the baud rate must be set to 9600 bauds.

Every aspect of the device can be configured via parameters.
They can be modified by means of:

- Instrument keyboard
- Copy Card
- by sending data via the Modbus protocol straight to individual instruments, or via broadcast, using the address 0 (broadcast).

The connection diagram when using Modbus is shown below:

With a RS485 serial connection	Using a TTL serial connection + BusAdapter
	

PC/Interface connection	RS232 cable	**PC/Interface connection**	RS232 cable
Device/BusAdapter connection	RS485 cable shielded and twisted (e.g.: Belden cable model 8762)	**Device/BusAdapter connection**	5-path connector TTL cable (30cm) (other sizes/lengths available)
		BusAdapter	BA150
		BusAdapter/Interface connection	RS485 cable shielded and twisted (e.g.: Belden cable model 8762)

1.1.2 Modbus commands available and data areas

The commands implemented are:

Modbus command	***Description of command***
3	Reading multiple registers A maximum of 60 consecutive registers can be read. **Parameters belonging to two different non-consecutive blocks cannot be read using a single command.**
16	Writing multiple registers A maximum of 60 consecutive registers can be written.
43	Reading instrument ID The following 3 fields can be read:

Field code	***Field description***
0	Manufacturer ID (=”Invensys”)
1	Instrument model ID
2	Instrument version ID

Length restrictions

maximum length in bytes of messages sent to device	30 BYTE
maximum length in bytes of messages received by device	30 BYTE

1.2 Address configuration

The device address in a ModBus message comprises one byte and consists of the family code and the device code, indicated by dBA, made up of parameters FAA and dEA respectively.
The Device Address therefore consists of two nibbles:

- **dEA:** low nibble
- **FAA:** high nibble

To calculate the address using parameters FAA and dEA:

dBA = **FAA** x 16 + **dEA**

Address 0 is used for broadcast queries that are recognized by all the slaves. Slaves do not respond to broadcast queries.

1.3 Parameters/visibility table and Client table description

The **tables below** list all information required to read, write and decode all accessible resources in the device.
There are two tables:

- the **parameters** table contains all device configuration parameters stored in the instrument's non-volatile memory and the visibility.
- the **client** table includes all I/O and alarm state resources available in the instrument's volatile memory.

Description **of columns:**

FOLDER This indicates the *label* of the *folder* containing the parameter in question

LABEL This indicates the *label* used to display the **parameters** in the instrument's menu.

VALUE PAR ADDRESS The whole part represents the address of the MODBUS register containing the value of the resource to be read or written to the instrument. The value after the point indicates the position of the most significant data bit in the register; if not indicated it is taken to be zero. This information is always provided when the register contains more than one information item, and it is necessary to distinguish which bits actually represent the data (the working size of the data indicated in the *DATA SIZE* colum is also taken into consideration). Given that the modbus registers are the size of one WORD (16 bit), the index number after the point can vary from 0 (least significant bit –LSb–) to 15 (most significant bit –MSb–).

Examples (in binary form the least significant bit is the first on the right):

VAL PAR ADDRESS	*DATA SIZE*	Value	Content of register	
8806	WORD	1350	1350	(0000010101000110)
8806	Byte	70	1350	(00000101**01000110**)
8806,8	Byte	5	1350	(**00000101**01000110)
8806,14	1 bit	0	1350	(**00**000101010001l0)
8806,7	4 bit	10	1350	(00000**1010**1000110)

Important: when the register contains more than one data item, during the write operation proceed as follows:

- read current register value
- modify the bits that represent the resource concerned
- write the register

VIS

**** Value Visibility**

- Value 3 = parameter or *folder* always visible
- Value 2 = **installation level;** these parameters can only be seen by entering the manufacturer's password (see parameter PA2) (all parameters specified as always visible, parameters that are visible at the installation level, and manufacturer level parameters will be visible).
- Value 1 = **user level**; these parameters can only be viewed by entering the installation password (see parameter PA1) (all parameters specified as always visible and parameters that are visible at the installation level will be visible)
- Value 0 = parameter or *folder* NOT visible

1. Parameters and/or folders with visibility level <>3 (i.e. password protected) will only be visible if the correct password is entered (installation or user) following the procedure outlined below:
2. Parameters and/or folders with visibility level =3 are always visible and no password is required; in this case, the procedure below is not required.

VIS PAR ADDRESS Same as above. In this case, the parameter visibility value is in the MODBUS register address. By *default*, all parameters have:

- *Data size* 2 bit
- *Range* 0...3
- **Visibilità 1, 2 or 3
- *U.M.* num

Examples (in binary form the least significant bit is the first on the right):
Default **visibility:**

VIS PAR ADDRESS	*DATA SIZE*	Value	Content of register	
49747	2 bit	0	120	(0000000001111**00**)
49747,2	2 bit	2	120	(0000000001111**10**00)
49747,4	2 bit	3	120	(000000000**11**1000)
49747,6	2 bit	1	120	(000000000**01**111000)

To modify the visibility value of parameter LS1 (address 49747,6) from 3 to 0:

Visibility modified

VAL PAR ADDRESS	*DATA SIZE*	Value	Content of register	
49747,4	2 bit	0	72	(000000000**00**1000)

R/W

Indicates if resources are read/write, read-only or write-only:

R Read-only resource.
W Write-only resource.
RW Read / write resource.

DESCRIPTION

It is the *description* of the **parameters** meaning in the ***LABEL*** column.

DATA SIZE

Indicates the size of the data in bits.

WORD = 16 bits
Byte = 8 bits
"n" bit = 0...15 bits depending on value of "n"

CPL

When the field indicates "Y", the value read by the register must be converted, because the value represents a number with a sign. In the other cases the value is always positive or null.
To carry out conversion, proceed as follows:

- if the value in the register is between 0 and 32,767, the result is the value itself (zero and positive values).
- if the value in the register is between 32,768 and 65,535, the result is the value of the register - 65,536 (negative values).

RANGE

Describes the interval of values that can be assigned to the parameter. It can be correlated with other parameters in the instrument (indicated with the parameter *label*).

DEFAULT

Indicates the factory setting for the standard model of the instrument.

EXP

If = -1 the value read from the register is divided by 10 (value/10) to convert it to the values given in the *RANGE* and *DEFAULT* column and the unit of measure specified in the ***U.M.*** column.
Example: parameter CF04 = 50.0. Column *EXP* = -1:

- The value read by the device/ParamManager is 50.0.
- The value read from the register is 500 --> 500/10 = 50.0.

U.M.

Measurement unit for values converted according to the rules indicated in the *CPL* and *EXP* columns.

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1.4.1 DR4000 Thermocouple - Parameters / visibility table

FOLDER	*LABEL*	VALUE PAR. ADDRESS	*VIS.*	*VIS.* PAR. ADDRESS	*R/W*	*DESCRIPTION*	*DATA SIZE*	*CPL*	*RANGE*	*DEFAULT* TcJ	*EXP*	M.U.
rE1	**SP1**	**16392**	0	**49746,4**	RW	Regulation set point 1	WORD	Y	LS1 ... HS1	0	-1	°C/°F
rE1	**OS1**	**16394**	2	**49746,6**	RW	Offset on set point 1	WORD	Y	-300 ... 300	0	-1	°C/°F
rE1	**db1**	**16396**	3	**49747**	RW	Tripping band above set point 1	WORD		0 ... 300	10	-1	°C/°F
rE1	**dF1**	**16398**	3	**49747,2**	RW	Differential of set point 1	WORD		1 ... 300	10	-1	°C/°F
rE1	**HC1**	**49269**	3	**49768**	RW	Operating mode of set point 1 (Heating/Cooling)	BYTE		0 ... 1	0		flag
rE1	**HS1**	**16400**	3	**49747,4**	RW	Maximum value settable for set point 1	WORD	Y	LS1 ... HdL	7600	-1	°C/°F
rE1	**LS1**	**16402**	3	**49747,6**	RW	Minimum value settable for set point 1	WORD	Y	LdL ... HS1	-400	-1	°C/°F
rE1	**HA1**	**16404**	3	**49748**	RW	Max. alarm regulator 1	WORD	Y	LA1 ... 29100	29100	-1	°C/°F
rE1	**LA1**	**16406**	3	**49748,2**	RW	Min. alarm regulator 1	WORD	Y	-3280 ... HA1	-400	-1	°C/°F
rE1	**dn1**	**49216**	2	**49748,4**	RW	Start-up delay of regulator 1	BYTE		0 ... 255	0		secs
rE1	**do1**	**49217**	2	**49748,6**	RW	Shutdown delay of regulator 1	BYTE		0 ... 255	0		min
rE1	**di1**	**49218**	2	**49749**	RW	Delay between two consecutive starts of regulator 1	BYTE		0 ... 255	0		min
rE1	**dE1**	**49219**	2	**49749,2**	RW	Start-up delay after the shutdown of regulator 1	BYTE		0 ... 255	0		secs
rE1	**On1**	**49220**	2	**49749,4**	RW	ON time of regulator 1 due faulty probe	BYTE		0 ... 255	0		min
rE1	**OF1**	**49221**	2	**49749,6**	RW	OFF time of regulator 1 due faulty probe	BYTE		0 ... 255	1		min
rE2	**SP2**	**16408**	0	**49750**	RW	Regulation set point 2	WORD	Y	LS2 ... HS2	0	-1	°C/°F
rE2	**OS2**	**16410**	2	**49750,2**	RW	Offset on set point 2	WORD	Y	-300 ... 300	0	-1	°C/°F
rE2	**db2**	**16412**	3	**49750,4**	RW	Tripping band above set point 2	WORD		0 ... 300	10	-1	°C/°F
rE2	**dF2**	**16414**	3	**49750,6**	RW	Differential of set point 2	WORD		1 ... 300	10	-1	°C/°F
rE2	**HC2**	**49270**	3	**49768,2**	RW	Operating mode of set point 2 (Heating/Cooling)	BYTE		0 ... 1	0		flag
rE2	**HS2**	**16416**	3	**49751**	RW	Maximum value settable for set point 2	WORD	Y	LS2 ... HdL	7600	-1	°C/°F
rE2	**LS2**	**16418**	3	**49751,2**	RW	Minimum value settable for set point 2	WORD	Y	LdL ... HS2	-400	-1	°C/°F
rE2	**HA2**	**16420**	3	**49751,4**	RW	Max. alarm regulator 2	WORD	Y	LA2 ... 29100	29100	-1	°C/°F
rE2	**LA2**	**16422**	3	**49751,6**	RW	Min. alarm regulator 2	WORD	Y	-3280 ... HA2	-400	-1	°C/°F
rE2	**dn2**	**49223**	2	**49752**	RW	Start-up delay of regulator 2	BYTE		0 ... 255	0		secs
rE2	**do2**	**49224**	2	**49752,2**	RW	Shutdown delay of regulator 2	BYTE		0 ... 255	0		min
rE2	**di2**	**49225**	2	**49752,4**	RW	Delay between two consecutive starts of regulator 2	BYTE		0 ... 255	0		min
rE2	**dE2**	**49226**	2	**49752,6**	RW	Start-up delay after the shutdown of regulator 2	BYTE		0 ... 255	0		secs
rE2	**On2**	**49227**	2	**49753**	RW	ON time of regulator 2 due faulty probe	BYTE		0 ... 255	0		min
rE2	**OF2**	**49228**	2	**49753,2**	RW	OFF time of regulator 2 due faulty probe	BYTE		0 ... 255	1		min
AnOu	**AOL**	**49264**	3	**49766,6**	RW	Analog output configuration	BYTE		0 ... 4	0		num
AnOu	**AOF**	**49265**	3	**49767**	RW	Operation mode of analogue output	BYTE		0 ... 4	1		num

FOLDER	LABEL	VALUE PAR. ADDRESS	VIS.	VIS. PAR. ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT TcJ	EXP	M.U.
AnOu	**AOS**	**49266**	3	**49767,2**	RW	Operation mode of analogue output with probe error	BYTE		0 ... 1	1		flag
AnOu	**LAO**	**16442**	3	**49767,4**	RW	Lower limit of analogue output	WORD	Y	LdL ... HdL	0	-1	num
AnOu	**HAO**	**16444**	3	**49767,6**	RW	Upper limit of analogue output	WORD	Y	LdL ... HdL	1000	-1	num
SFt	**dSi**	**49229**	2	**49753,4**	RW	Value of soft start regulator step	BYTE		0 ... 250	0	-1	°C/°F
SFt	**Std**	**49230**	2	**49753,6**	RW	Duration of soft start regulator step	BYTE		0 ... 255	0		hh/min/secs
SFt	**unt**	**49231**	2	**49754**	RW	Unit of measurement for step duration	BYTE		0 ... 2	1		num
SFt	**SEn**	**49232**	2	**49754,2**	RW	Selects the regulator on which the soft start function must be enabled	BYTE		0 ... 3	1		num
SFt	**Sdi**	**16428**	2	**49754,4**	RW	Automatic back swing of Soft start function	WORD		0 ... 300	0	-1	°C/°F
cLc	**Con**	**49233**	2	**49754,6**	RW	ON time for cyclic regulator output	BYTE		0 ... 255	0		min
cLc	**Cof**	**49234**	2	**49755**	RW	OFF time for cyclic regulator output	BYTE		0 ... 255	0		min
ALAr	**Att**	**49235**	2	**49755,2**	RW	Mode of parameter HA1-HA2 and LA-LA2 (absolute or relative)	BYTE		0 ... 1	0		flag
ALAr	**Afd**	**16430**	2	**49755,4**	RW	Alarm differential	WORD		10 ... 500	20	-1	°C/°F
ALAr	**PAO**	**49236**	3	**49755,6**	RW	Temperature alarms disabling time from Power On	BYTE		0 ... 10	0		ore
ALAr	**SAO**	**49237**	3	**49756**	RW	Timeout for "set point not reached" alarm	BYTE		0 ... 24	0		ore
ALAr	**tAO**	**49238**	3	**49756,2**	RW	Temperature alarms delay time	BYTE		0 ... 255	0		min
ALAr	**AOP**	**49239**	2	**49756,4**	RW	Polarity of alarm output	BYTE		0 ... 1	0		flag
Add	**PtS**	**49241**	3	**49757**	RW	Protocol selection	BYTE		0 ... 1	0		flag
Add	**dEA**	**49243**	3	**49757,2**	RW	Device address	BYTE		0 ... 14	0		num
Add	**FAA**	**49242**	3	**49757,4**	RW	Family address	BYTE		0 ... 14	0		num
Add	**PtY**	**49244**	3	**49757,6**	RW	Modbus parity bit	BYTE		0 ... 2	1		num
Add	**StP**	**49245**	3	**49758**	RW	Modbus stop bit	BYTE		0 ... 1	0		flag
diSP	**LOC**	**49246**	3	**49758,2**	RW	Enable keyboard lock	BYTE		0 ... 1	0		flag
diSP	**PA1**	**16432**	3	**49758,4**	RW	Value of password 1	WORD		0 ... 999	0		num
diSP	**PA2**	**16434**	2	**49758,6**	RW	Value of password 2	WORD		0 ... 999	0		num
diSP	**CA1**	**16436**	3	**49759,2**	RW	Probe calibration	WORD	Y	-300 ... 300	0	-1	°C/°F
diSP	**Cai**	**49248**	2	**49759,4**	RW	Calibration enabling	BYTE		0 ... 2	2		num
diSP	**LdL**	**16438**	2	**49759,6**	RW	Minimum value that can be displayed	WORD	Y	-3280 ... HdL	-400	-1	°C/°F
diSP	**HdL**	**16440**	2	**49760**	RW	Maximum value that can be displayed	WORD	Y	LdL ... 29100	29100	-1	°C/°F
diSP	**dro**	**49249**	3	**49760,2**	RW	°C/°F selection	BYTE		0 ... 1	0		flag
diSP	**ddd**	**49271**	3	**49768,4**	RW	Select main display	BYTE		0 ... 2	0		num
CnF	**H00**	**49250**	3	**49760,4**	RW	Type of probe selection	BYTE		0 ... 1	0		num
CnF	**H01**	**49252**	2	**49760,6**	RW	Configure type of regulators	BYTE		0 ... 6	4		num
CnF	**H02**	**49251**	2	**49761**	RW	Keyboard functions enabling time	BYTE		0 ... 15	5		secs
CnF	**H06**	**49253**	2	**49761,6**	RW	Key or aux./light digital input ON with unit OFF	BYTE		0 ... 1	1		flag

FOLDER	*LABEL*	VALUE PAR. ADDRESS	*VIS.*	*VIS.* PAR. ADDRESS	*R/W*	*DESCRIPTION*	*DATA SIZE*	*CPL*	*RANGE*	*DEFAULT* TcJ	*EXP*	M.U.
CnF	**H08**	**49254**	2	**49762**	RW	Standby operating mode	BYTE		0 ... 2	2		num
CnF	**H10**	**49255**	3	**49762,2**	RW	Delay output enabling from Power On	BYTE		0 ... 255	0		min
CnF	**H11**	**49256**	2	**49762,4**	RW	ID configuration	BYTE		0 ... 11	0		num
CnF	**H13**	**49257**	2	**49762,6**	RW	Polarity and priority of digital inputs	BYTE		0 ... 3	0		num
CnF	**H14**	**49258**	2	**49763**	RW	Enabling delay of digital inputs	BYTE		0 ... 255	0		min
CnF	**H21**	**49214**	2	**49763,2**	RW	Configurability of digital output 1	BYTE		0 ... 4	0		num
CnF	**H22**	**49259**	2	**49763,4**	RW	Configurability of digital output 2	BYTE		0 ... 4	0		num
CnF	**H31**	**49261**	2	**49764,2**	RW	UP button configurability	BYTE		0 ... 9	0		num
CnF	**H32**	**49262**	2	**49764,4**	RW	DOWN button configurability	BYTE		0 ... 9	0		num
CnF	**H34**	**49268**	2	**49764,6**	RW	Free button configurability	BYTE		0 ... 9	0		num
CnF	**rEL**	**---**	3	**49765,4**	R	Parameter visibility	2 bit		0 ... 3	3		num
CnF	**tAb**	**---**	3	**49765,6**	R	Parameter visibility	2 bit		0 ... 3	3		num

(1) See Paragraph "Visibility and Value of Parameters "

1.4.2 DR4000 Thermocouple – Client table

LABEL	ADDRESS	*R/W*	*DESCRIPTION*	*DATA SIZE*	*CPL*	*RANGE*	*DEFAULT* Tcj	*EXP*	M.U.
ValSondeVis[0]	**135**	R	Analogue input 1	WORD	Y	-580 ... 3020	0	-1	°C/°F
D.I. 1	**32888,6**	R	Digital input 1	1 bit		0 ... 1	0		flag
E1	**32891,1**	R	Analog input 1 failure	1 bit		0 ... 1	0		flag
AH1	**32891,2**	R	High alarm reg. 1	1 bit		0 ... 1	0		flag
AL1	**32891,3**	R	Low alarm reg. 1	1 bit		0 ... 1	0		flag
EA	**32891,4**	R	External	1 bit		0 ... 1	0		flag
AH2	**32891,5**	R	High alarm reg. 2	1 bit		0 ... 1	0		flag
AL2	**32891,6**	R	Low alarm reg. 2	1 bit		0 ... 1	0		flag
SPnr	**32900**	R	Setpoint not reached	1 bit		0 ... 1	0		flag
RL1	**32818,3**	R	Out 1	1 bit		0 ... 1	0		flag
RL2	**32827**	R	Out 2	1 bit		0 ... 1	0		flag
RL3	**32827,2**	R	Out 3	1 bit		0 ... 1	0		flag
Buzzer	**34009**	R	Buzzer	BYTE		0 ... 1	0		flag
Set ridotto	**33076**	R	Reduced set-point	1 bit		0 ... 1	0		flag
on/off	**33076,1**	R	On	1 bit		0 ... 1	0		flag
soft start	**33076,2**	R	Soft Start	1 bit		0 ... 1	0		flag
AUX	**33076,4**	R	Auxiliary	1 bit		0 ... 1	0		flag
modifica parametri	**33076,5**	R	Modified parameters	1 bit		0 ... 1	0		flag
RCContOn	**32898**	W	Continuous Cycle On	1 bit		0 ... 1	1		flag
RCContOff	**32898,1**	W	Continuous Cycle Off	1 bit		0 ... 1	1		flag
RAttSetR	**32898,2**	W	Economy Mode On	1 bit		0 ... 1	1		flag
RDisAttSetR	**32898,3**	W	Economy Mode Off	1 bit		0 ... 1	1		flag
ROnAux	**32898,4**	W	Auxiliary output On	1 bit		0 ... 1	1		flag
ROffAux	**32898,5**	W	Auxiliary output Off	1 bit		0 ... 1	1		flag
ROnOn	**32898,6**	W	Instrument On	1 bit		0 ... 1	1		flag
ROffOff	**32898,7**	W	Instrument Off	1 bit		0 ... 1	1		flag
RTacAllarm	**32899**	W	Alarm silencing	1 bit		0 ... 1	1		flag
TelRSetPar	**32899,3**	W	Reset changed parameters indicator	1 bit		0 ... 1	1		flag
ROffMan	**32899,4**	W	Instrument Off for maintenance	1 bit		0 ... 1	1		flag
ROnSStart	**32899,5**	W	Soft Start On	1 bit		0 ... 1	1		flag
ROffSStart	**32899,6**	W	Soft Start Off	1 bit		0 ... 1	1		flag

DR4000 NTC - PTC - PT100

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1.5.1 DR4000 NTC/PTC/PT100 - Parameters / visibility table

FOLDER	LABEL	VALUE PAR. ADDRESS	VIS.	VIS. PAR. ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT		EXP	M.U.
										NTC PTC	PT100		
rE1	**SP1**	**16392**	0	**49746,4**	RW	Regulation set point 1	WORD	Y	LS1 ... HS1	0	0	-1	°C/°F
rE1	**OS1**	**16394**	2	**49746,6**	RW	Offset on set point 1	WORD	Y	-300 ... 300	0	0	-1	°C/°F
rE1	**db1**	**16396**	3	**49747**	RW	Tripping band above set point 1	WORD		0 ... 300	20	20	-1	°C/°F
rE1	**dF1**	**16398**	3	**49747,2**	RW	Differential of set point 1	WORD		1 ... 300	20	20	-1	°C/°F
rE1	**HC1**	**49269**	3	**49768**	RW	Operating mode of set point 1 (Heating/Cooling)	BYTE		0 ... 1	1	1		flag
rE1	**HS1**	**16400**	3	**49747,4**	RW	Maximum value settable for set point 1	WORD	Y	LS1 ... HdL	8000	8000	-1	°C/°F
rE1	**LS1**	**16402**	3	**49747,6**	RW	Minimum value settable for set point 1	WORD	Y	LdL ... HS1	-2000	-2000	-1	°C/°F
rE1	**HA1**	**16404**	2	**49748**	RW	Max. alarm regulator 1	WORD	Y	LA1 ... 29100	29100	29100	-1	°C/°F
rE1	**LA1**	**16406**	2	**49748,2**	RW	Min. alarm regulator 1	WORD	Y	-3280 ... HA1	-3280	-3280	-1	°C/°F
rE1	**dn1**	**49216**	2	**49748,4**	RW	Start-up delay of regulator 1	BYTE		0 ... 255	0	0		secs
rE1	**do1**	**49217**	2	**49748,6**	RW	Shutdown delay of regulator 1	BYTE		0 ... 255	0	0		min
rE1	**di1**	**49218**	2	**49749**	RW	Delay between two consecutive starts of regulator 1	BYTE		0 ... 255	0	0		min
rE1	**dE1**	**49219**	2	**49749,2**	RW	Start-up delay after the shutdown of regulator 1	BYTE		0 ... 255	0	0		secs
rE1	**On1**	**49220**	2	**49749,4**	RW	ON time of regulator 1 due faulty probe	BYTE		0 ... 255	0	0		min
rE1	**OF1**	**49221**	2	**49749,6**	RW	OFF time of regulator 1 due faulty probe	BYTE		0 ... 255	1	1		min
rE2	**SP2**	**16408**	0	**49750**	RW	Regulation set point 2	WORD	Y	LS2 ... HS2	0	0	-1	°C/°F
rE2	**OS2**	**16410**	2	**49750,2**	RW	Offset on set point 2	WORD	Y	-300 ... 300	0	0	-1	°C/°F
rE2	**db2**	**16412**	3	**49750,4**	RW	Tripping band above set point 2	WORD		0 ... 300	20	20	-1	°C/°F
rE2	**dF2**	**16414**	3	**49750,6**	RW	Differential of set point 2	WORD		1 ... 300	20	20	-1	°C/°F
rE2	**HC2**	**49270**	3	**49768,2**	RW	Operating mode of set point 2 (Heating/Cooling)	BYTE		0 ... 1	1	1		flag
rE2	**HS2**	**16416**	3	**49751**	RW	Maximum value settable for set point 2	WORD	Y	LS2 ... HdL	8000	8000	-1	°C/°F
rE2	**LS2**	**16418**	3	**49751,2**	RW	Minimum value settable for set point 2	WORD	Y	LdL ... HS2	-2000	-2000	-1	°C/°F
rE2	**HA2**	**16420**	2	**49751,4**	RW	Max. alarm regulator 2	WORD	Y	LA2 ... 29100	29100	29100	-1	°C/°F
rE2	**LA2**	**16422**	2	**49751,6**	RW	Min. alarm regulator 2	WORD	Y	-3280 ... HA2	-3280	-3280	-1	°C/°F
rE2	**dn2**	**49223**	2	**49752**	RW	Start-up delay of regulator 2	BYTE		0 ... 255	0	0		secs
rE2	**do2**	**49224**	2	**49752,2**	RW	Shutdown delay of regulator 2	BYTE		0 ... 255	0	0		min
rE2	**di2**	**49225**	2	**49752,4**	RW	Delay between two consecutive starts of regulator 2	BYTE		0 ... 255	0	0		min
rE2	**dE2**	**49226**	2	**49752,6**	RW	Start-up delay after the shutdown of regulator 2	BYTE		0 ... 255	0	0		secs
rE2	**On2**	**49227**	2	**49753**	RW	ON time of regulator 2 due faulty probe	BYTE		0 ... 255	0	0		min
rE2	**OF2**	**49228**	2	**49753,2**	RW	OFF time of regulator 2 due faulty probe	BYTE		0 ... 255	1	1		min
AnOu	**AOL**	**49264**	2	**49766,6**	RW	Analog output configuration	BYTE		0 ... 4	0	0		num
AnOu	**AOF**	**49265**	2	**49767**	RW	Operation mode of analogue output	BYTE		0 ... 4	1	1		num

FOLDER	LABEL	VALUE PAR. ADDRESS	VIS.	VIS. PAR. ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT		EXP	M.U.
										NTC PTC	PT100		
AnOu	**AOS**	**49266**	2	**49767,2**	RW	Operation mode of analogue output with probe error	BYTE		0 ... 1	1	1		flag
AnOu	**LAO**	**16442**	2	**49767,4**	RW	Lower limit of analogue output	WORD	Y	LdL ... HdL	0	0	-1	num
AnOu	**HAO**	**16444**	2	**49767,6**	RW	Upper limit of analogue output	WORD	Y	LdL ... HdL	1000	1000	-1	num
SFt	**dSi**	**49229**	2	**49753,4**	RW	Value of soft start regulator step	BYTE		0 ... 250	0	0	-1	°C/°F
SFt	**Std**	**49230**	2	**49753,6**	RW	Duration of soft start regulator step	BYTE		0 ... 255	0	0		hh/min/secs
SFt	**unt**	**49231**	2	**49754**	RW	Unit of measurement for step duration	BYTE		0 ... 2	1	1		num
SFt	**SEn**	**49232**	2	**49754,2**	RW	Selects the regulator on which the soft start function must be enabled	BYTE		0 ... 3	1	1		num
SFt	**Sdi**	**16428**	2	**49754,4**	RW	Automatic back swing of Soft start function	WORD		0 ... 300	0	0	-1	°C/°F
cLc	**Con**	**49233**	2	**49754,6**	RW	ON time for cyclic regulator output	BYTE		0 ... 255	0	0		min
cLc	**Cof**	**49234**	2	**49755**	RW	OFF time for cyclic regulator output	BYTE		0 ... 255	0	0		min
ALAr	**Att**	**49235**	2	**49755,2**	RW	Mode of parameter HA1-HA2 and LA-LA2 (absolute or relative)	BYTE		0 ... 1	0	0		flag
ALAr	**Afd**	**16430**	2	**49755,4**	RW	Alarm differential	WORD		10 ... 500	20	20	-1	°C/°F
ALAr	**PAO**	**49236**	2	**49755,6**	RW	Temperature alarms disabling time from Power On	BYTE		0 ... 10	0	0		hours
ALAr	**SAO**	**49237**	2	**49756**	RW	Timeout for "set point not reached" alarm	BYTE		0 ... 24	0	0		hours
ALAr	**tAO**	**49238**	2	**49756,2**	RW	Temperature alarms delay time	BYTE		0 ... 255	0	0		min
ALAr	**AOP**	**49239**	2	**49756,4**	RW	Polarity of alarm output	BYTE		0 ... 1	0	0		flag
Add	**PtS**	**49241**	2	**49757**	RW	Protocol selection	BYTE		0 ... 1	0	0		flag
Add	**dEA**	**49243**	2	**49757,2**	RW	Device address	BYTE		0 ... 14	0	0		num
Add	**FAA**	**49242**	2	**49757,4**	RW	Family address	BYTE		0 ... 14	0	0		num
Add	**PtY**	**49244**	2	**49757,6**	RW	Modbus parity bit	BYTE		0 ... 2	1	1		num
Add	**StP**	**49245**	2	**49758**	RW	Modbus stop bit	BYTE		0 ... 1	0	0		flag
diSP	**LOC**	**49246**	3	**49758,2**	RW	Enable keyboard lock	BYTE		0 ... 1	0	0		flag
diSP	**PA1**	**16432**	3	**49758,4**	RW	Value of password 1	WORD		0 ... 999	0	0		num
diSP	**PA2**	**16434**	2	**49758,6**	RW	Value of password 2	WORD		0 ... 999	0	0		num
diSP	**ndt**	**49247**	3	**49759**	RW	Display with decimal point	BYTE		0 ... 1	1	1		flag
diSP	**CA1**	**16436**	2	**49759,2**	RW	Probe calibration	WORD	Y	-300 ... 300	0	0	-1	°C/°F
diSP	**Cai**	**49248**	3	**49759,4**	RW	Calibration enabling	BYTE		0 ... 2	0	0		num
diSP	**LdL**	**16438**	2	**49759,6**	RW	Minimum value that can be displayed	WORD	Y	-3280 ... HdL	-3280	-3280	-1	°C/°F
diSP	**HdL**	**16440**	2	**49760**	RW	Maximum value that can be displayed	WORD	Y	LdL ... 29100	29100	29100	-1	°C/°F
diSP	**dro**	**49249**	3	**49760,2**	RW	°C/°F selection	BYTE		0 ... 1	0	0		flag
diSP	**ddd**	**49271**	2	**49768,4**	RW	Select main display	BYTE		0 ... 2	0	0		num
CnF	**H00****	**49250**	3	**49760,4**	RW	Type of probe selection	BYTE		0 ... 3	1			num
CnF	**H01**	**49252**	3	**49760,6**	RW	Configure type of regulators	BYTE		0 ... 6	4	4		num
CnF	**H02**	**49251**	2	**49761**	RW	Keyboard functions enabling time	BYTE		0 ... 15	5	5		secs

FOLDER	LABEL	VALUE PAR. ADDRESS	VIS.	VIS. PAR. ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT		EXP	M.U.
										NTC PTC	PT100		
CnF	**H06**	**49253**	2	**49761,6**	RW	Key or aux./light digital input ON with unit OFF	BYTE		0 ... 1	1	1		flag
CnF	**H08**	**49254**	2	**49762**	RW	Standby operating mode	BYTE		0 ... 2	2	2		num
CnF	**H10**	**49255**	2	**49762,2**	RW	Delay output enabling from Power On	BYTE		0 ... 255	0	0		min
CnF	**H11**	**49256**	2	**49762,4**	RW	ID configuration	BYTE		0 ... 11	0	0		num
CnF	**H13**	**49257**	2	**49762,6**	RW	Polarity and priority of digital inputs	BYTE		0 ... 3	0	0		num
CnF	**H14**	**49258**	2	**49763**	RW	Enabling delay of digital inputs	BYTE		0 ... 255	0	0		min
CnF	**H21**	**49214**	2	**49763,2**	RW	Configurability of digital output 1	BYTE		0 ... 4	0	0		num
CnF	**H22**	**49259**	2	**49763,4**	RW	Configurability of digital output 2	BYTE		0 ... 4	0	0		num
CnF	**H31**	**49261**	2	**49764,2**	RW	UP button configurability	BYTE		0 ... 9	0	0		num
CnF	**H32**	**49262**	2	**49764,4**	RW	DOWN button configurability	BYTE		0 ... 9	0	0		num
CnF	**H34**	**49268**	2	**49764,6**	RW	Free button configurability	BYTE		0 ... 9	0	0		num
CnF	**rEL**	**---**	3	**49765,4**	R	Parameter visibility	2 bit		0 ... 3	3	3		num
CnF	**tAb**	**---**	3	**49765,6**	R	Parameter visibility	2 bit		0 ... 3	3	3		num

(1) See Paragraph "Visibility and Value of Parameters "

**** Parameter visible only for models DR4000 NTC and DR4000 PTC**

1.5.2 DR4000 NTC/PTC/PT100 – Client table

LABEL	ADDRESS	*R/W*	*DESCRIPTION*	*DATA SIZE*	*CPL*	*RANGE*	*DEFAULT*	*EXP*	M.U.
ValSondeVis[0]	**135**	R	Analogue input 1	WORD	Y	-580 ... 3020	0	-1	°C/°F
D.I. 1	**32888,6**	R	Digital input 1	1 bit		0 ... 1	0		flag
E1	**32891,1**	R	Analog input 1 failure	1 bit		0 ... 1	0		flag
AH1	**32891,2**	R	High alarm reg. 1	1 bit		0 ... 1	0		flag
AL1	**32891,3**	R	Low alarm reg. 1	1 bit		0 ... 1	0		flag
EA	**32891,4**	R	External	1 bit		0 ... 1	0		flag
AH2	**32891,5**	R	High alarm reg. 2	1 bit		0 ... 1	0		flag
AL2	**32891,6**	R	Low alarm reg. 2	1 bit		0 ... 1	0		flag
SPnr	**32900**	R	Setpoint not reached	1 bit		0 ... 1	0		flag
RL1	**32818,3**	R	Out 1	1 bit		0 ... 1	0		flag
RL2	**32827**	R	Out 2	1 bit		0 ... 1	0		flag
RL3	**32827,2**	R	Out 3	1 bit		0 ... 1	0		flag
Buzzer	**34009**	R	Buzzer	BYTE		0 ... 1	0		flag
Set ridotto	**33076**	R	Reduced set-point	1 bit		0 ... 1	0		flag
on/off	**33076,1**	R	On	1 bit		0 ... 1	0		flag
soft start	**33076,2**	R	Soft Start	1 bit		0 ... 1	0		flag
AUX	**33076,4**	R	Auxiliary	1 bit		0 ... 1	0		flag
modifica parametri	**33076,5**	R	Modified parameters	1 bit		0 ... 1	0		flag
RCContOn	**32898**	W	Continuous Cycle On	1 bit		0 ... 1	1		flag
RCContOff	**32898,1**	W	Continuous Cycle Off	1 bit		0 ... 1	1		flag
RAttSetR	**32898,2**	W	Economy Mode On	1 bit		0 ... 1	1		flag
RDisAttSetR	**32898,3**	W	Economy Mode Off	1 bit		0 ... 1	1		flag
ROnAux	**32898,4**	W	Auxiliary output On	1 bit		0 ... 1	1		flag
ROffAux	**32898,5**	W	Auxiliary output Off	1 bit		0 ... 1	1		flag
ROnOn	**32898,6**	W	Instrument On	1 bit		0 ... 1	1		flag
ROffOff	**32898,7**	W	Instrument Off	1 bit		0 ... 1	1		flag
RTacAllarm	**32899**	W	Alarm silencing	1 bit		0 ... 1	1		flag
TelRSetPar	**32899,3**	W	Reset changed parameters indicator	1 bit		0 ... 1	1		flag
ROffMan	**32899,4**	W	Instrument Off for maintenance	1 bit		0 ... 1	1		flag
ROnSStart	**32899,5**	W	Soft Start On	1 bit		0 ... 1	1		flag
ROffSStart	**32899,6**	W	Soft Start Off	1 bit		0 ... 1	1		flag

DR4000 V - I

MSK453

1.6.1 DR4000 V-I - Parameters / visibility table

FOLDER	LABEL	VALUE PAR. ADDRESS	VIS.	VIS. PAR. ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT	EXP	M.U.
rE1	**SP1**	**16392**	0	**49746,4**	RW	Regulation set point 1	WORD	Y	LS1 ... HS1	0	-1	°C/°F
rE1	**OS1**	**16394**	2	**49746,6**	RW	Offset on set point 1	WORD	Y	-300 ... 300	0	-1	°C/°F
rE1	**db1**	**16396**	3	**49747**	RW	Tripping band above set point 1	WORD		0 ... 300	10	-1	°C/°F
rE1	**dF1**	**16398**	3	**49747,2**	RW	Differential of set point 1	WORD		1 ... 300	-10	-1	°C/°F
rE1	**HC1**	**49269**	3	**49768**	RW	Operating mode of set point 1 (Heating/Cooling)	BYTE		0 ... 1	1		flag
rE1	**HS1**	**16400**	3	**49747,4**	RW	Maximum value settable for set point 1	WORD	Y	LS1 ... HdL	1000	-1	°C/°F
rE1	**LS1**	**16402**	3	**49747,6**	RW	Minimum value settable for set point 1	WORD	Y	LdL ... HS1	0	-1	°C/°F
rE1	**HA1**	**16404**	3	**49748**	RW	Max. alarm regulator 1	WORD	Y	LA1 ... 9999	1000	-1	°C/°F
rE1	**LA1**	**16406**	3	**49748,2**	RW	Min. alarm regulator 1	WORD	Y	-1999 ... HA1	0	-1	°C/°F
rE1	**dn1**	**49216**	2	**49748,4**	RW	Start-up delay of regulator 1	BYTE		0 ... 255	0		secs
rE1	**do1**	**49217**	2	**49748,6**	RW	Shutdown delay of regulator 1	BYTE		0 ... 255	0		min
rE1	**di1**	**49218**	2	**49749**	RW	Delay between two consecutive starts of regulator 1	BYTE		0 ... 255	0		min
rE1	**dE1**	**49219**	2	**49749,2**	RW	Start-up delay after the shutdown of regulator 1	BYTE		0 ... 255	0		secs
rE1	**On1**	**49220**	2	**49749,4**	RW	ON time of regulator 1 due faulty probe	BYTE		0 ... 255	0		min
rE1	**OF1**	**49221**	2	**49749,6**	RW	OFF time of regulator 1 due faulty probe	BYTE		0 ... 255	1		min
rE2	**SP2**	**16408**	0	**49750**	RW	Regulation set point 2	WORD	Y	LS2 ... HS2	0	-1	°C/°F
rE2	**OS2**	**16410**	2	**49750,2**	RW	Offset on set point 2	WORD	Y	-300 ... 300	0	-1	°C/°F
rE2	**db2**	**16412**	3	**49750,4**	RW	Tripping band above set point 2	WORD		0 ... 300	10	-1	°C/°F
rE2	**dF2**	**16414**	3	**49750,6**	RW	Differential of set point 2	WORD		1 ... 300	-10	-1	°C/°F
rE2	**HC2**	**49270**	3	**49768,2**	RW	Operating mode of set point 1 (Heating/Cooling)	BYTE		0 ... 1	0		flag
rE2	**HS2**	**16416**	3	**49751**	RW	Maximum value settable for set point 2	WORD	Y	LS2 ... HdL	1000	-1	°C/°F
rE2	**LS2**	**16418**	3	**49751,2**	RW	Minimum value settable for set point 2	WORD	Y	LdL ... HS2	0	-1	°C/°F
rE2	**HA2**	**16420**	3	**49751,4**	RW	Max. alarm regulator 2	WORD	Y	LA2 ... 9999	1000	-1	°C/°F
rE2	**LA2**	**16422**	3	**49751,6**	RW	Min. alarm regulator 2	WORD	Y	-1999 ... HA2	0	-1	°C/°F
rE2	**dn2**	**49223**	2	**49752**	RW	Start-up delay of regulator 2	BYTE		0 ... 255	0		secs
rE2	**do2**	**49224**	2	**49752,2**	RW	Shutdown delay of regulator 2	BYTE		0 ... 255	0		min
rE2	**di2**	**49225**	2	**49752,4**	RW	Delay between two consecutive starts of regulator 2	BYTE		0 ... 255	0		min
rE2	**dE2**	**49226**	2	**49752,6**	RW	Start-up delay after the shutdown of regulator 2	BYTE		0 ... 255	0		secs
rE2	**On2**	**49227**	2	**49753**	RW	ON time of regulator 2 due faulty probe	BYTE		0 ... 255	0		min
rE2	**OF2**	**49228**	2	**49753,2**	RW	OFF time of regulator 2 due faulty probe	BYTE		0 ... 255	1		min
AnOu	**AOL**	**49264**	3	**49766,6**	RW	Analog output configuration	BYTE		0 ... 4	0		num
AnOu	**AOF**	**49265**	3	**49767**	RW	Operation mode of analogue output	BYTE		0 ... 4	1		num

FOLDER	LABEL	VALUE PAR. ADDRESS	VIS.	VIS. PAR. ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT	EXP	M.U.
AnOu	**AOS**	**49266**	3	**49767,2**	RW	Operation mode of analogue output with probe error	BYTE		0 ... 1	1		flag
AnOu	**LAO**	**16442**	3	**49767,4**	RW	Lower limit of analogue output	WORD	Y	LdL ... HdL	0	-1	num
AnOu	**HAO**	**16444**	3	**49767,6**	RW	Upper limit of analogue output	WORD	Y	LdL ... HdL	1000	-1	num
SFt	**dSi**	**49229**	2	**49753,4**	RW	Value of soft start regulator step	BYTE		0 ... 250	0	-1	°C/°F
SFt	**Std**	**49230**	2	**49753,6**	RW	Duration of soft start regulator step	BYTE		0 ... 255	0		hh/min/secs
SFt	**unt**	**49231**	2	**49754**	RW	Unit of measurement for step duration	BYTE		0 ... 2	1		num
SFt	**SEn**	**49232**	2	**49754,2**	RW	Selects the regulator on which the soft start function must be enabled	BYTE		0 ... 3	1		num
SFt	**Sdi**	**16428**	2	**49754,4**	RW	Automatic back swing of Soft start function	WORD		0 ... 300	0	-1	°C/°F
cLc	**Con**	**49233**	2	**49754,6**	RW	ON time for cyclic regulator output	BYTE		0 ... 255	0		min
cLc	**Cof**	**49234**	2	**49755**	RW	OFF time for cyclic regulator output	BYTE		0 ... 255	0		min
ALAr	**Att**	**49235**	2	**49755,2**	RW	Mode of parameter HA1-HA2 and LA-LA2 (absolute or relative)	BYTE		0 ... 1	0		flag
ALAr	**Afd**	**16430**	2	**49755,4**	RW	Alarm differential	WORD		10 ... 500	20	-1	°C/°F
ALAr	**PAO**	**49236**	3	**49755,6**	RW	Temperature alarms disabling time from Power On	BYTE		0 ... 10	0		hours
ALAr	**SAO**	**49237**	3	**49756**	RW	Timeout for "set point not reached" alarm	BYTE		0 ... 24	0		hours
ALAr	**tAO**	**49238**	3	**49756,2**	RW	Temperature alarms delay time	BYTE		0 ... 255	0		min
ALAr	**AOP**	**49239**	2	**49756,4**	RW	Polarity of alarm output	BYTE		0 ... 1	0		flag
Add	**PtS**	**49241**	3	**49757**	RW	Protocol selection	BYTE		0 ... 1	0		flag
Add	**dEA**	**49243**	3	**49757,2**	RW	Device address	BYTE		0 ... 14	0		num
Add	**FAA**	**49242**	3	**49757,4**	RW	Family address	BYTE		0 ... 14	0		num
Add	**PtY**	**49244**	3	**49757,6**	RW	Modbus parity bit	BYTE		0 ... 2	1		num
Add	**StP**	**49245**	3	**49758**	RW	Modbus stop bit	BYTE		0 ... 1	0		flag
diSP	**LOC**	**49246**	3	**49758,2**	RW	Enable keyboard lock	BYTE		0 ... 1	0		flag
diSP	**PA1**	**16432**	3	**49758,4**	RW	Value of password 1	WORD		0 ... 999	0		num
diSP	**PA2**	**16434**	2	**49758,6**	RW	Value of password 2	WORD		0 ... 999	0		num
diSP	**ndt**	**49247**	3	**49759**	RW	Display with decimal point	BYTE		0 ... 3	1		num
diSP	**CA1**	**16436**	3	**49759,2**	RW	Probe calibration	WORD	Y	-300 ... 300	0	-1	°C/°F
diSP	**Cai**	**49248**	2	**49759,4**	RW	Calibration enabling	BYTE		0 ... 2	2		num
diSP	**LdL**	**16438**	2	**49759,6**	RW	Minimum value that can be displayed	WORD	Y	-1999 ... HdL	0	-1	°C/°F
diSP	**HdL**	**16440**	2	**49760**	RW	Maximum value that can be displayed	WORD	Y	LdL ... 9999	1000	-1	°C/°F
diSP	**dro**	**49249**	3	**49760,2**	RW	°C/°F selection	BYTE		0 ... 6	0		num
CnF	**ddd**	**49271**	3	**49768,4**	RW	Select main display	BYTE		0 ... 2	0		num
CnF	**H00**	**49250**	3	**49760,4**	RW	Type of probe selection	BYTE		0 ... 4	3		num
CnF	**H01**	**49252**	2	**49760,6**	RW	Configure type of regulators	BYTE		0 ... 6	4		num
CnF	**H02**	**49251**	2	**49761**	RW	Keyboard functions enabling time	BYTE		0 ... 15	5		secs

FOLDER	LABEL	VALUE PAR. ADDRESS	VIS.	VIS. PAR. ADDRESS	R/W	DESCRIPTION	DATA SIZE	CPL	RANGE	DEFAULT	EXP	M.U.
CnF	**H03**	**16424**	2	**49761,2**	RW	Minimum limit for current input	WORD	Y	-1999 ... 9999	0		num
CnF	**H04**	**16426**	2	**49761,4**	RW	Maximum limit for current input	WORD	Y	-1999 ... 9999	100		num
CnF	**H06**	**49253**	2	**49761,6**	RW	Key or aux./light digital input ON with unit OFF	BYTE		0 ... 1	1		flag
CnF	**H08**	**49254**	2	**49762**	RW	Standby operating mode	BYTE		0 ... 2	2		num
CnF	**H10**	**49255**	3	**49762,2**	RW	Delay output enabling from Power On	BYTE		0 ... 255	0		min
CnF	**H11**	**49256**	2	**49762,4**	RW	ID configuration	BYTE		0 ... 11	0		num
CnF	**H13**	**49257**	2	**49762,6**	RW	Polarity and priority of digital inputs	BYTE		0 ... 3	0		num
CnF	**H14**	**49258**	2	**49763**	RW	Enabling delay of digital inputs	BYTE		0 ... 255	0		min
CnF	**H21**	**49214**	2	**49763,2**	RW	Configurability of digital output 1	BYTE		0 ... 4	0		num
CnF	**H22**	**49259**	2	**49763,4**	RW	Configurability of digital output 2	BYTE		0 ... 4	0		num
CnF	**H31**	**49261**	2	**49764,2**	RW	UP button configurability	BYTE		0 ... 9	0		num
CnF	**H32**	**49262**	2	**49764,4**	RW	DOWN button configurability	BYTE		0 ... 9	0		num
CnF	**H34**	**49268**	2	**49764,6**	RW	Free button configurability	BYTE		0 ... 9	0		num
CnF	**rEL**	**---**	3	**49765,4**	R	Parameter visibility	2 bit		0 ... 3	3		num
CnF	**tAb**	**---**	3	**49765,6**	R	Parameter visibility	2 bit		0 ... 3	3		num

(1) See Paragraph "Visibility and Value of Parameters "

1.6.2 DR4000 V-I – Client table

LABEL	ADDRESS	*R/W*	*DESCRIPTION*	*DATA SIZE*	*CPL*	*RANGE*	*DEFAULT*	*EXP*	M.U.
AI *vis*	**135**	R	Analogue input (display)	WORD	Y	-1999 ... 9999	0	-1	°C/°F
AI reg	**137**	R	Analogue input (control)	WORD	Y	-1999 ... 9999	0	-1	°C/°F
D.I. 1	**32888,6**	R	Digital input 1	1 bit		0 ... 1	0		flag
E1	**32891,1**	R	Analog input 1 failure	1 bit		0 ... 1	0		flag
AH1	**32891,2**	R	High alarm reg. 1	1 bit		0 ... 1	0		flag
AL1	**32891,3**	R	Low alarm reg. 1	1 bit		0 ... 1	0		flag
EA	**32891,4**	R	External	1 bit		0 ... 1	0		flag
AH2	**32891,5**	R	High alarm reg. 2	1 bit		0 ... 1	0		flag
AL2	**32891,6**	R	Low alarm reg. 2	1 bit		0 ... 1	0		flag
SPnr	**32900**	R	Setpoint not reached	1 bit		0 ... 1	0		flag
RL1	**32818,3**	R	Out 1	1 bit		0 ... 1	0		flag
RL2	**32827**	R	Out 2	1 bit		0 ... 1	0		flag
RL3	**32827,2**	R	Out 3	1 bit		0 ... 1	0		flag
Buzzer	**33817**	R	Buzzer	BYTE		0 ... 1	0		flag
Set ridotto	**33076**	R	Reduced set-point	1 bit		0 ... 1	0		flag
on/off	**33076,1**	R	On	1 bit		0 ... 1	0		flag
soft start	**33076,2**	R	Soft Start	1 bit		0 ... 1	0		flag
AUX	**33076,4**	R	Auxiliary	1 bit		0 ... 1	0		flag
modifica parametri	**33076,5**	R	Modified parameters	1 bit		0 ... 1	0		flag
RCContOn	**32898**	W	Continuous Cycle On	1 bit		0 ... 1	1		flag
RCContOff	**32898,1**	W	Continuous Cycle Off	1 bit		0 ... 1	1		flag
RAttSetR	**32898,2**	W	Economy Mode On	1 bit		0 ... 1	1		flag
RDisAttSetR	**32898,3**	W	Economy Mode Off	1 bit		0 ... 1	1		flag
ROnAux	**32898,4**	W	Auxiliary output On	1 bit		0 ... 1	1		flag
ROffAux	**32898,5**	W	Auxiliary output Off	1 bit		0 ... 1	1		flag
ROnOn	**32898,6**	W	Instrument On	1 bit		0 ... 1	1		flag
ROffOff	**32898,7**	W	Instrument Off	1 bit		0 ... 1	1		flag
RTacAllarm	**32899**	W	Alarm silencing	1 bit		0 ... 1	1		flag
TelRSetPar	**32899,3**	W	Reset changed parameters indicator	1 bit		0 ... 1	1		flag
ROffMan	**32899,4**	W	Instrument Off for maintenance	1 bit		0 ... 1	1		flag
ROnSStart	**32899,5**	W	Soft Start On	1 bit		0 ... 1	1		flag
ROffSStart	**32899,6**	W	Soft Start Off	1 bit		0 ... 1	1		flag

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VIS PAR ADDRESS ***5***

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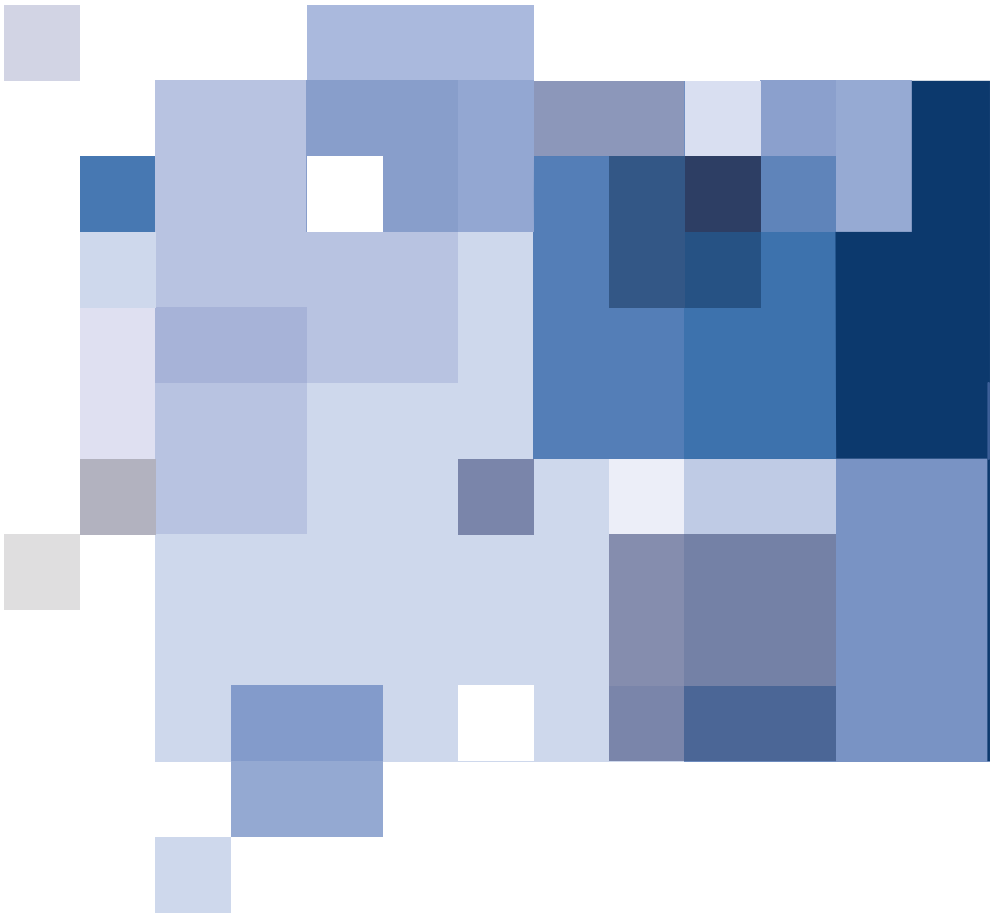

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