

**Communication protocol for
Serial ModBUS® for KRD7
Blind controller with 24 V DC motor speed control**

From Firmware version r 1.1.0

Address map

The K_7 family devices are able to operate in two different mode:

I dispositivi della famiglia K_7 possono operare in 2 modi diversi:

- 1) Control (PID od ON/OFF) of a physical quantity + speed control for a 24 V DC motor.
- 2) Speed control for a 24 V DC motor only.

The operative mode selection can be done by default parameter loading procedure.

When, by keyboard or serial link, a password equal to -481 is used, the instrument will perform the FULL mode (Control (PID od ON/OFF) of a physical quantity + speed control for a 24 V DC motor)

When, by keyboard or serial link, a password equal to -481 is used, the instrument will perform the SPEED mode (speed control for a 24 V DC motor only).

Follow two parameter lists according to the two mode selectable.

the list

All Kube instruments use only words:

Initial address		Final address		Meaning
Hex	Dec	Hex	Dec	
0	0	35	53	Group of variables common to all new Ascon Tecnologic's instruments: numeric values calculated and dynamically updated. Available in read and write operations
200	512	250	592	Group of variables compatible with the old Ascon Tecnologic's instruments (before Kube series): numeric values calculated and dynamically updated. Available in read and write operations
280	640	323	803	Configuration parameters: Numeric and symbolic values. Available in read and write operations.
800	2048	82C	2092	Instrument identification parameters
2800	10240	28A3	10403	Repetition of the configuration parameters: Numeric and symbolic values. Available in read and write operations
CF08	53000	CF5E	53086	Instrument identification parameters for the new instruments. Read only

5.1 Common Variables

n.	Address		Description	Dec	r/w
	HEX	Dec.			
0A	0	0	Reserved	0	w
1A	1	1	PV: Measured value Note: When a measuring error is detected the instrument send: • 10000 = Underrange • 10000 = Overrange • 10001 = Overflow of the A/D converter • 10003 = Variable not available	dP	r
2A	2	2	Number of decimal figures of the measured value	0	r
3A	3	3	Operative set point (value)	dP	r
4A	4	4	Power output Range: -100.00 ÷ 100.00 (%) Note: This parameter is ever writeable but it will be active only when the instrument operate in Manual mode.	2	r/w
5A	5	5	Active set point selection 0 = SP 1 = SP 2 2 = SP 3 3 = SP 4	0	r/w
6A	6	6	SP Range: SPLL ÷ SPLH	dP	r/w
7A	7	7	SP 2 Range: SPLL ÷ SPLH	dP	r/w
8A	8	8	SP 3 Range: SPLL ÷ SPLH	dP	r/w
9A	9	9	SP 4 Range: SPLL ÷ SPLH	dP	r/w
10A	A	10	Alarms status bit 0 = Alarm 1 status bit 1 = Alarm 2 status bit 2 = Alarm 3 status bit 3 ÷ 8 = Reserved bit 9 = LBA status bit 10 = Power failure indicator bit 11 = Generic error bit 12 = Overload alarm bit 13 ÷ 15 = Reserved	0	r
11A	B	11	Outputs status (physical outputs) bit 0 = Output 1 status bit 1 = Output 2 status bit 3 = Output 3 status bit 4 to 15 = reserved	0	r

n.	Address		Description	Dec	r/w
	HEX	Dec.			
12A	C	12	Instrument status bit 0 = Automatic bit 1 = manual bit 2 = Standby bit 3 = Remote Set point (temporary) used bit 4 = Auto-tuning active bit 5 = Self tuning active bit 6 = Reserved bit 7 = Timer running bit 8 = Soft start running bit 9 = Ramp for set point change (up or down) running bit 10 = Delay at start up (od) running bit 11 = Program running bit 12 = Measure status (0 = OK while 1 = error). Bit 13 = Speed calibration running bit 14÷15 = Reserved	0	r
13A	D	13	Alarms reset 0 = Not reset 1 = Reset	0	r/w
14A	E	14	Alarms acknowledge 0 = Not acknowledge 1 = acknowledge	0	r/w
15A	F	15	Control status 0 = Automatic 1 = Manual 2 = Stand-by	0	r/w
16A	10	16	Remote set point (temporary) (from serial link) Range: SPLL ÷ SPLH Note: the remote set point is stored in RAM	dP	r/w
17A	11	17	Auto tuning activation 0 = not active 1 = active	0	r/w
18A	12	18	Power output used when a measuring error is detected. Range: -100 ÷ 100 Note: This value is stored in RAM	0	r/w
19A	13	19	Default parameters loading. -481 = FULL mode default parameter loading -418 = SPEED mode default parameter loading	0	r/ w
20A	14	20	Parameters table identification code Range: 0 ÷ 65535 Note: The word is composed by two parts: - Low byte – Version of the parameter table - High byte – Version of the family protocoll	0	r
21A	15	21	Instrument identification code 35 = KR7 36 = KM7 37 = KX7	0	r
22 A	1A	26	Time to end of running program segment Range: 0 ÷ 9959 (hh.mm or mm.ss) Note: When the program is not active, the return value is 0.	0	r

n.	Address		Description	Dec	r/w
	HEX	Dec.			
23A	1B	27	Manual autotuning start request pending for Od or Soft start Range: 0 = No pending request waiting for the execution; 1 = Pending request waiting for the execution	0	r
24A	1C	28	Autotuning start request pending for setpoint change for Od or Soft start Range: 0 = No pending request waiting for the execution; 1 = Pending request waiting for the execution	0	r
25A	1D	29	% Current speed	0	r
26A	31	49	RUN/STOP command for Speed output 0 = stop 1 = start	0	R/W
27A	32	50	Speed calibration phase made by keyboard 0 = no 1 = wait 2 = ON 3 = END	0	R
28A	33	51	Speed calibration phase made by serial link 0 = no 1 = wait 2 = ON 3 = END	0	R/W
29A	34	52	Active speed in E.U.		r
30A	35	53	Mode selected 0 = FULL 1 = SPEED	0	r

**Group of variables compatible with the old Ascon Tecnologic's instruments
(before Kube series)**

n.	Address		Description	Dec	r/w
	HEX	Dec.			
1B	200	512	PV : Measured value As Modbus address 1	dP	r
2B	201	513	Number of decimal figure of the measured value As Modbus address 2	0	r
3B	202	514	Power output As Modbus address 4	2	r
4B	203	515	Power output of the heating output Range: 0 ÷ 100.00 (%)	2	r
5B	204	516	Power output of the cooling output Range: 0 ÷ 100.00 (%)	2	r
6B	205	517	Alarm 1 status 0 = OFF 1 = ON	0	r
7B	206	518	Alarm 2 status 0 = OFF 1 = ON	0	r
8B	207	519	Alarm 3 status 0 = OFF 1 = ON	0	r
9B	208	520	Operative set point As Modbus address 3	dP	r
10B	20A	522	LBA status 0 = OFF 1 = ON	0	r
11B	20E	526	Overload alarm status 0 = OFF 1 = ON	0	r
12B	20F	527	Controller status 0 = Stand-by 1 = Auto 2 = Tuning 3 = Manual	0	r
13B	224	548	Status/remote control of the Output 1 0 = OFF 1 = ON Note: This parameter is writeable when out 1 is “not used” by the controller (o1F = output 1 function = nonE). This parameter is stored in RAM	0	r
14B	225	549	Status/remote control of the Output 2 0 = OFF 1 = ON Note: This parameter is writeable when out 2 is “not used” by the controller (o2F = output 2 function = nonE). This parameter is stored in RAM	0	r/w

n.	Address		Description	Dec	r/w
	HEX	Dec.			
15B	226	550	Status/remote control of the Output 3 0 = OFF 1 = ON Note: This parameter is writeable when out 3 is “not used” by the controller (o3F output 3 function = nonE). This parameter is stored in RAM	0	r/w
16B	240	576	Digital input 1 status 0 = OFF 1 = ON Note: Digital input 1 status can be read from the serial port even if the input is not used by the controller	0	r
17B	241	577	Digital input 2 status 0 = OFF 1 = ON Note: Digital input 2 status can be read from the serial port even if the input is not used by the controller	0	r
18B	244	580	Program status 0 = Not configured 1 = Reset (not running) 2 = Run 3 = Hold 4 = Wait (system) 5 = End (system) 6 = Hold + Wait (system) 7 = Continue	0	r/w
19B	245	581	Timer status 0 = Not configured 1 = Reset (stop) 2 = Run 3 = Hold 4 = End (Read only)	0	r/w
20B	246	582	Program step in execution 0 = Program not active 1 = ramp step 1 2 = soak step 1 2 = ramp step 2 4 = soak step 2 5 = ramp step 3 6 = soak step 3 7 = ramp step 4 8 = soak step 4 9 = END	0	r
21B	247	583	Remaining time to program end Range: 0 ÷ 65535 (minutes when Pru=hh.mm, seconds when Pru=mm.ss) Note: When the program is not running the return code is 0	2	r
22B	248	584	Program events status 0 > E1 = 0 E2 = 0 1 > E1 = 1 E2 = 0 2 > E1 = 0 E2 = 1 3 > E1 = 1 E2 = 1	0	r
23B	249	585	Remaining time to the timer end Range: 0 ÷ 65535 (Hours when Tru=hh.mm, Minutes when Tru=mm.ss)	2	r
			0 ÷ 9959 (tenths of seconds when Tru=SSS.d) Note: When the timer is not active the return code is 0.	1	r

n.	Address		Description	Dec	r/w
	HEX	Dec.			
24B	24A	586	Working time: The meaning of this parameter is defined by the CO.ty parameter setting. CO.ty = 0ff 0 CO.ty = 1/2 Total worked days; CO.ty = 3/4 Total worked hours CO.ty = 5/6 Totalizer of control relay worked days; CO.ty = 7/8 Totalizer of control relay worked hours;	0	r
25B	24B	587	Duration of the first program ramp Range: 0 ÷ 9999 s	0	r
26B	24C	588	Days counted with the controller Powered ON Range: 0 ÷ 9999	0	r
27B	250	592	Power output when the instrument is in manual mode Range:-10000 ÷ 10000 (%)	2	r/w

Instrument identification parameters

n.	Address		Description	Dec	r/w
	HEX	Dec.			
Identificativo strumento					
1	800	2048	Instrument identification code 1 Range : AB A – identify instrument family by protocol list code B – Identify the protocol list version.	0	r
2	801	2049	Instrument identification code 2 Range : CD C – Identify “special version” D – Instrument type	0	r
3	802	2050	Instrument identification code 3 – Reserved	0	r
4	803	2051	Instrument identification code 4 - Reserved	0	r
5	804	2052	Instrument identification code 5 - Reserved	0	r

n.	Address		Description	Dec	r/w
	HEX	Dec.			
6	805	2053	Instrument identification code 6 – Reserved	0	r
7	806	2054	Instrument identification code 7 – Reserved	0	r
8	807	2055	Instrument identification code 8 – Reserved Value: 0x31	0	r
Firmware revision of the instrument – in ASCII format Example: revision r4.35					
9	808	2056	Firmware revision 1 – High part Example: 0x7234 - 'r4'	0	r
10	809	2057	Firmware revision 2 – low part Example: 0x3335 - '35'	0	r
Product code					
11	80A	2058	Model Code – Instrument type 1 Range: 0x4B = 'K'	0	r
12	80B	2059	Model Code – Instrument type 2 Range: 0x4D = 'M' - KM 0x52 = 'R' - KR 0x58 = 'X' - KX	0	r
13	80C	2060	Model Code – Instrument type 3 Range: 0x37 = '7' - KM7, KR7, KX7	0	r
14	80D	2061	Model Code – Optional functions Range: 0x2D = '-' - No functions 0x54 = 'T' - Timer 0x50 = 'P' - Timer + Programmer	0	r
15	80E	2062	Model Code – Power supply type Range: 0x48 = 'H' - 110 ÷ 240 Vac/Vdc 0x4C = 'L' - 24 Vac/Vdc	0	r
16	80F	2063	Model Code – Measure input type Range: 0x43 = 'C' - Tc, Pt100, Pt1000, mA, mV, V + Digital Input 1 0x45 = 'E' - Tc, PTC, NTC, mA, mV, V + Digital Input 1	0	r
17	810	2064	Model Code – Output 1 type Range: 0x53 = 'S' - Pilotaggio motore 24 Vdc 4A	0	r
18	811	2065	Model Code – Output 2 type Range: 0x2D = '-' - Not present 0x4D = 'M' – Servomotor command relay 0x4F = 'O' - SSR 0x52 = 'R' - Relay	0	r

n.	Address		Description	Dec	r/w
	HEX	Dec.			
19	812	2066	Model Code – Output 3 type Range: 0x2D = ‘-’ - Not present 0x4D = ‘M’ – Servomotor command relay 0x4F = ‘O’ - SSR 0x52 = ‘R’ - Relay	0	r
20	813	2067	Model Code – Output 4 type Range: 0x43 = ‘D’ - Output 4 (VDC for SSR)/Sensor Power Supply/Digital Input DI2	0	r
21	814	2068	Model Code – Serial communication type Range: 0x2D = ‘-’ - TTL 0x53 = ‘S’ - Rs485 Modbus	0	r
22	815	2069	Model Code – Terminal type Range: 0x2D = ‘-’ - Standard (screw terminals not removable) 0x45 = ‘E’ - Removable screw terminals 0x4D = ‘M’ - Removable spring terminals 0x4E = ‘N’ - Removable terminals (the fixed part only)	0	r
23	816	2070	Model Code – Reserved	0	r
24	817	2071	Model Code – Reserved	0	r
25	818	2072	Model Code – Reserved	0	r
26	819	2073	Model Code – Reserved	0	r
27	81A	2074	Model Code – Reserved	0	r
28	81B	2075	Model Code – Reserved	0	r
29	81C	2076	Model Code – Reserved	0	r
30	81D	2077	Model Code – Reserved	0	r
31	81E	2078	Model Code – Reserved	0	r
32	81F	2079	Model Code – Reserved	0	r
33	820	2080	Model Code – Reserved	0	r
34	821	2081	Model Code – Reserved	0	r
35	822	2082	Model Code – Reserved	0	r
36	823	2083	Model Code – Reserved	0	r
37	824	2084	Model Code – Reserved	0	r
38	825	2085	Model Code – Reserved	0	r
Serial number Example : Serial number: 1.237.422=0x12E1AE					
39	826	2086	Serial number 1 - LL example : 0x00AE	0	r
40	827	2087	Serial number 2 – L example : 0x00E1	0	r

n.	Address		Description	Dec	r/w
	HEX	Dec.			
41	828	2088	Serial number 3 – H example : 0x0012	0	r
42	829	2089	Serial number 4 – HH example : 0x0000	0	r
Calibration data example : 28 January 2016					
43	82A	2090	Day example : 28	0	r
44	82B	2091	Month example : 1	0	r
45	82C	2092	Year example : 2016	0	r

1.1. Configuration parameter in FULL mode:

inP GROUP - Main and auxiliary input configuration

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
1	SEnS	280	640	Input type	0 = J TC J		
		2800	10240		1 = crAL TC K 2 = S TC S 3 = r TC R 4 = t TC T 5 = ir.J Exergen IRS type J 6 = ir.cA Exergen IRS type K 7 = Pt1 RTD Pt 100 8 = Pt10 RTD Pt 1000 9 = 0-60 0÷60 mV 10 = 12-60 12÷60 mV 11 = 0-20 0÷20 mA 12 = 4-20 4÷20 mA 13 = 0-5 0÷5 V 14 = 1-5 1÷5 V 15 = 0-10 0÷10 V 16 = 2-10 2÷10 V	0	r/w
2	dP	281	641	Decimal Point Position	From 0 to 3 for linear inputs 0 or 1 for TC or RTD inputs	0	r/w
		2801	10241				
3	SSc	282	642	Initial scale read-out for linear inputs	-1999 ÷ 9999 (E.U.)	dP	r/w
		2802	10242				
4	FSc	283	643	Full Scale Readout for linear inputs	-1999 ÷ 9999 (E.U.)	dP	r/w
		2803	10243				
5	unit	284	644	Engineer unit	0 = C > °C 1 = F > °F	0	r/w
		2804	10244				
6	FiL	285	645	Digital filter on the measured value Note: This filter affects the control action, the PV retransmission and the alarms action.	0 = (oFF) ÷ 200	1	r/w
		2805	10245				
7	inE	286	646	Sensor error used to enable the safety output value	0 = our > Over e Under 1 = or > Over-range 2 = ur > Under-range	0	r/w
		2806	10246				
8	oPE	287	647	Safety output value (% of the output)	-100 ÷ 100 (%)	0	r/w
		2807	10247				

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
9	io3F	288	648	I/O3 function	0 = dG2c > Digital input 2 driven by contact, 1 = G2U > Digital input 2 driven by voltage 2 = on > Output used as PWS for TX, 3 = out3 > Digital output 3 3	0	r/w
		2808	10248				
10	rEcS	289	649	Recipes enable (temperature + speed)	0 = no 1 = YES	0	r/w
		2809	10249				
11	diF1	28A	650	Digital Input 1 function	0 = nonE= Not used 1 = AAc = Alarm reset [status] 2 = ASi = Alarm acknowledge (ACK) [status]. 3 = hoLd = Hold of the measured value [status]. 4 = Stby = Stand-by mode [status] 5 = oPLo = manual node (Open Loop) [status] 6 = hEco = H + SP, C + SP2 [status] 7 = Strt =Timer run/hold/reset [transition] 8 = t.run = Timer run [transition] 9 = t.rES = Timer reset [transition] 10 = t.r.h = Timer run/hold [status] 11 = t.r.r = Timer run/reset [status] 12 = t.r.r.b =Timer run/reset with lock. 13 = P.run = Program Run [transition] 14 = P.rES = Program Reset [transition] 15 = P.r.h.t = Program Hold [transition] 16 = P.r.h.S = Program Run/hold [status] 17 = P.r.r = Program Run/reset [status] 18 = Sdr.S = SPEED/TIME run/stop [status] 19 = Sdr.t = SPEED/TIME run/stop [transition] 20 = ch.SP = Sequential SP selection [transition] 21 = ch.Sd = Sequential Speed selection [transition] 22 = SP14 = Binary SP selection 23 = Sd14 = Binary Speed selection	0	r/w
		280A	10250				

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
12	diF2	28B 280B	651 10251	Digital Input 2 function	0 = nonE= Not used 1 = AAc = Alarm reset [status] 2 = ASi = Alarm acknowledge (ACK) [status]. 3 = hoLd = Hold of the measured value [status]. 4 = Stby = Stand-by mode [status] 5 = oPLo = manual node (Open Loop) [status] 6 = hEco = H + SP, C + SP2 [status] 7 = Strt =Timer run/hold/reset [transition] 8 = t.run = Timer run [transition] 9 = t.rES = Timer reset [transition] 10 = t.r.h = Timer run/hold [status] 11 = t.r.r = Timer run/reset [status] 12 = t.r.r.b =Timer run/reset with lock. 13 = P.run = Program Run [transition] 14 = P.rES = Program Reset [transition] 15 = P.r.h.t = Program Hold [transition] 16 = P.r.h.S = Program Run/hold [status] 17 = P.r.r = Program Run/reset [status] 18 = Sdr.S = SPEED/TIME run/stop [status] 19 = Sdr.t = SPEED/TIME run/stop [transition] 20 = ch.SP = Sequential SP selection [transition] 21 = ch.Sd = Sequential Speed selection [transition] 22 = SP14 = Binary SP selection 23 = Sd14 = Binary Speed selection	0	r/w
13	di.A	28C 280C	652 10252	Digital Inputs Action	0 = DI1 direct action, DI2 direct action; 1 = DI1 reverse action, DI2 direct action; 2 = DI1 direct action, DI2 reverse action; 3 = DI1 reverse action, DI2 reverse action.	0	r/w

Out group

n.	Param .	Address		Description	Values	Dec	r/w
		Hex	Dec				
14	o1F	28D 280D	653 10253	Out 1 function	0 = NonE = Output not used 1 = H.rEG = Heating output 2 = c.rEG = Cooling output 3 = AL = Alarm output 4 = t.out = Timer output 5 = t.HoF = Timer out -OFF in hold 6 = P.End = Program end indicator 7 = P.HLd = Program hold indicator 8 = P.uit = Program wait indicator 9 = P.run = Program run indicator 10 = P.Et1 = Program Event 1 11 = P.Et2 = Program Event 2 12 = or.bo = Out-of-range or burn out indicator 13 = P.FAL = Power failure indicator 14 = bo.PF = Out-of-range, burn out and Power failure indicator 15 = St.bY = Stand by status indicator 16 = diF.1 = The output repeats the digital input 1 status 17 = diF.2 = The output repeats the digital input 2 status 18 = on = Out 1 always ON 19= riSP = Inspection request	0	r/w
15	o1AL	28E 280E	654 10254	Alarms linked up with the out 1	From 0 to 63 +1 = Alarm 1 +2 = Alarm 2 +4 = Alarm 3 +8 = Loop break alarm +16 = Sensor Break +32 = Overload on output 4		
16	o1Ac	28F 280F	655 10255	Out 1 action	0 = dir = Direct action 1 = rEU = Reverse action 2 = dir.r = Direct with reversed LED 3 = ReU.r = Reverse with reversed LED		

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
17	o2F	290 2810	656 10256	Out 2 Function	0 = NonE = Output not used 1 = H.rEG = Heating output 2 = c.rEG = Cooling output 3 = AL = Alarm output 4 = t.out = Timer output 5 = t.HoF = Timer out -OFF in hold 6 = P.End = Program end indicator 7 = P.HLd = Program hold indicator 8 = P.uit = Program wait indicator 9 = P.run = Program run indicator 10 = P.Et1 = Program Event 1 11 = P.Et2 = Program Event 2 12 = or.bo = Out-of-range or burn out indicator 13 = P.FAL = Power failure indicator 14 = bo.PF = Out-of-range, burn out and Power failure indicator 15 = St.bY = Stand by status indicator 16 = diF.1 = The output repeats the digital input 1 status 17 = diF.2 = The output repeats the digital input 2 status 18 = on = Out 1 always ON 19= riSP = inspection request	0	r/w
18	o2AL	291 2811	657 10257	Alarms linked up with the out 2	From 0 to 63 +1 = Alarm 1 +2 = Alarm 2 +4 = Alarm 3 +8 = Loop break alarm +16 = Sensor Break +32 = Overload on output 4	0	r/w
19	o2Ac	292 2812	658 10258	Out 2 action	0 = dir = Direct action 1 = rEU = Reverse action 2 = dir.r = Direct with reversed LED 3 = ReU.r = Reverse with reversed LED		

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n.	Param .	Address		Description	Values	Dec	r/w
		Hex	Dec				
20	o3F	293 2813	659 10259	Out 3 function	0 = NonE = Output not used 1 = H.rEG = Heating output 2 = c.rEG = Cooling output 3 = AL = Alarm output 4 = t.out = Timer output 5 = t.HoF = Timer out -OFF in hold 6 = P.End = Program end indicator 7 = P.HLd = Program hold indicator 8 = P.uit = Program wait indicator 9 = P.run = Program run indicator 10 = P.Et1 = Program Event 1 11 = P.Et2 = Program Event 2 12 = or.bo = Out-of-range or burn out indicator 13 = P.FAL = Power failure indicator 14 = bo.PF = Out-of-range, burn out and Power failure indicator 15 = St.bY = Stand by status indicator		
21	o3AL	294 2814	660 10260	Alarms linked up with the out 3	From 0 to 63 +1 = Alarm 1 +2 = Alarm 2 +4 = Alarm 3 +8 = Loop break alarm +16 = Sensor Break +32 = Overload on output 4		
22	o3Ac	295 2815	661 10261	Out 3 action	0 = dir = Direct action 1 = rEU = Reverse action 2 = dir.r = Direct with reversed LED 3 = ReU.r = Reverse with reversed LED		

AL1 group

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
23	AL1t	296 2816	662 10262	Alarm 1 type	0 = nonE = Alarm not used 1 = LoAb = Absolute low alarm 2 = HiAb = Absolute high alarm 3 = LHAo = Windows alarm in alarm outside the windows 4 = LHAI = Windows alarm in alarm inside the windows 5 = SE.br = Sensor Break 6 = Lode = Deviation low alarm (relative) 7 = Hide = Deviation high alarm (relative) 8 = LHdo = Relative band alarm in alarm out of the band 9 = LHdi = Relative band alarm in alarm inside the band	0	r/w
24	Ab1	297 2817	663 10263	Alarm 1 function	0... 15 +1 = Not active at power up +2 = Latched alarm (manual reset) +4 = Acknowledgeable alarm +8 = Relative alarm not active at set point change	0	r/w
25	AL1L	298 2818	664 10264	-For High and low alarms, it is the low limit of the AL1 threshold; -For band alarm, it is low alarm threshold	From -1999 to AL1H (E.U.)	dP	r/w
26	AL1H	299 2819	665 10265	--For High and low alarms, it is the high limit of the AL1 threshold; --For band alarm, it is high alarm threshold	From AL1L to 9999 (E.U.)	dP	r/w
27	AL1	29A 281A	666 10266	AL1 threshold	From AL1L to AL1H (E.U.)	dP	r/w
28	HAL1	29B 281B	667 10267	AL1 hysteresis	From 1 to 9999 (E.U.)	dP	r/w
29	AL1d	29C 281C	668 10268	AL1 delay	From 0 = (off) to 9999 (s)	0	r/w
30	AL1o	29D 281D	669 10269	Alarm 1 enabling during Stand-by mode and out of range conditions	0 = Alarm disabled during Stand by and out of range 1 = Alarm enabled in stand by mode 2 = Alarm enabled in out of range condition 3 = Alarm enabled in stand by mode and in over range condition	0	r/w

AL2 group

n.	Para m	Address		Description	Values	Dec	r/w
		Hex	Dec				
31	AL2t	29E 281E	670 10270	Alarm 2 type	0 = nonE = Alarm not used 1 = LoAb = Absolute low alarm 2 = HiAb = Absolute high alarm 3 = LHAo = Windows alarm in alarm outside the windows 4 = LHAI = Windows alarm in alarm inside the windows 5 = SE.br = Sensor Break 6 = LodE = Deviation low alarm (relative) 7 = HidE = Deviation high alarm (relative) 8 = LHdo = Relative band alarm in alarm out of the band 9 = LHdi = Relative band alarm in alarm inside the band	0	r/w
32	Ab2	29F 281F	671 10271	Alarm 2 function	0... 15 +1 = Not active at power up +2 = Latched alarm (manual reset) +4 = Acknowledgeable alarm +8 = Relative alarm not active at set point change	0	r/w
33	AL2L	2A0 2820	672 10272	--For High and low alarms, it is the low limit of the AL2 threshold; --For band alarm, it is low alarm threshold	From -1999 to AL2H (E.U.)	dP	r/w
34	AL2H	2A1 2821	673 10273	--For High and low alarms, it is the high limit of the AL2 threshold; --For band alarm, it is high alarm threshold	From AL2L to 9999 (E.U.)	dP	r/w
35	AL2	2A2 2822	674 10274	AL2 threshold	From AL2L to AL2H (E.U.)	dP	r/w
36	HAL2	2A3 2823	675 10275	AL2 hysteresis	From 1 to 9999 (E.U.)	dP	r/w
37	AL2d	2A4 2824	676 10276	AL2 delay	From 0 = (oFF) to 9999 (s)	0	r/w
38	AL2o	2A5 2825	677 10277	Alarm 2 enabling during Stand-by mode and out of range conditions	0 = Alarm disabled during Stand by and out of range 1 = Alarm enabled in stand by mode 2 = Alarm enabled in out of range condition 3 = Alarm enabled in stand by mode and in over range condition	0	r/w

AL3 group

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
39	AL3t	2A6 2826	678 10278	Alarm 3 type	0 = nonE = Alarm not used 1 = LoAb = Absolute low alarm 2 = HiAb = Absolute high alarm 3 = LHAo = Windows alarm in alarm outside the windows 4 = LHAI = Windows alarm in alarm inside the windows 5 = SE.br = Sensor Break 6 = Lode = Deviation low alarm (relative) 7 = Hide = Deviation high alarm (relative) 8 = LHdo = Relative band alarm in alarm out of the band 9 = LHdi = Relative band alarm in alarm inside the band	0	r/w
40	Ab3	2A7 2827	679 10279	Alarm 3 function	0... 15 +1 = Not active at power up +2 = Latched alarm (manual reset) +4 = Acknowledgeable alarm +8 = Relative alarm not active at set point change	0	r/w
41	AL3L	2A8 2828	680 10280	-For High and low alarms, it is the low limit of the AL1 threshold; -For band alarm, it is low alarm threshold	From -1999 to AL1H (E.U.)	dP	r/w
42	AL3H	2A9 2829	681 10281	--For High and low alarms, it is the high limit of the AL1 threshold; --For band alarm, it is high alarm threshold	From AL1L to 9999 (E.U.)	dP	r/w
43	AL3	2AA 282A	682 10282	AL3 threshold	From Al1L to Al1H (E.U.)	dP	r/w
44	HAL3	2AB 282B	683 10283	AL3 hysteresis	From 1 to 9999 (E.U.)	dP	r/w
45	AL3d	2AC 282C	684 10284	AL3 delay	From 0 = (off) to 9999 (s)	0	r/w
46	AL3o	2AD 282D	685 10285	Alarm 3 enabling during Stand-by mode and out of range conditions	0 = Alarm disabled during Stand by and out of range 1 = Alarm enabled in stand by mode 2 = Alarm enabled in out of range condition 3 = Alarm enabled in stand by mode and in over range condition	0	r/w

1.1.1. SPED group (parameters related with the speed output)

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
47	Spd.P	2AE 282E	686 10286	Behaviour of the speed output at power up.	0= AS.Pr = start using the same speed used at power down. 1= OFF.A= starts with speed equal to zero and waits a “start” command 2= OFF.b = starts with speed equal to zero and waits until the measured value reaches the programmed band.	0	r/w
48	Spd.b	2AF 282F	687 10287	Band for speed output activation	From 0 = (OFF) to 9999 (E.U.)	dP	r/w
49	Spd.t	2B0 2830	688 10288	Engineering unit used to show the speed	0 = Perc 1 = tinE 2 = E.U.	0	r/w
50	Sd.dF	2B1 2831	689 10289	Speed decimal figure	0 to 3	0	r/w
51	Spd.r	2B2 2832	690 10290	Setting of the Time or speed detected with the speed output is equal to 100%	For Time: from 00.01 a 99.59 (mm.ss) For EU: from 0 to 9999 E.U.	2 Sd.dF	r/w
52	n.SPd	2B3 2833	691 10291	Number of used speed	From 1 to 4	0	r/w
53	Sd.t1	2B4 2834	692 10292	Speed/ time 1	When Spd.t = Perc 0 ÷ 100 (%) When Spd.t = tinE 00.01 ÷ 99.59 (mm.ss). When Spd.t = E.U. 0 ÷ 9999 E.U.	0 2 Sd.dF	r/w
54	Sd.t2	2B5 2835	693 10293	Speed/ time 2	When Spd.t = Perc 0 ÷ 100 (%) When Spd.t = tinE 00.01 ÷ 99.59 (mm.ss). When Spd.t = E.U. 0 ÷ 9999 E.U.	0 2 Sd.dF	r/w
55	Sd.t3	2B6 2836	694 10294	Speed/ time 3	When Spd.t = Perc 0 ÷ 100 (%) When Spd.t = tinE 00.01 ÷ 99.59 (mm.ss). When Spd.t = E.U. 0 ÷ 9999 E.U.	0 2 Sd.dF	r/w
56	Sd.t4	2B7 2837	695 10295	Velocità/tempo 4	When Spd.t = Perc 0 ÷ 100 (%) When Spd.t = tinE 00.01 ÷ 99.59 (mm.ss). When Spd.t = E.U. 0 ÷ 9999 E.U.	0 2 Sd.dF	r/w

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
57	A.Sd.t	2B8 2838	696 10296	Active Speed/ time	from 1 to 4	0	r/w
58	Sd.cA	2B9 2839	697 10297	Self-calibration Time to speed relation		0	r

LBA group - Loop Break Alarm Parameters

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
59	LbAt	2BA 283A	698 10298	LBA time	From 0 = (oFF) to 9999 (s)	0	r/w
60	LbSt	2BB 283B	699 10299	Delta measure used by LBA during Soft start	From 0 = (oFF) to 9999 (E.U.)	dP	r/w
61	LbAS	2BC 283C	700 10300	Delta measure used by LBA	From 1 to 9999 (E.U.)	dP	r/w
62	LbcA	2BD 283D	701 10301	Condition for LBA enabling	0 = uP = Active when Pout = 100% 1 = dn = Active when Pout = -100% 2 = both = Active in both cases	0	r/w

rEG group - Control Parameters

n.	Param.	Address		Description	Values	Dec	r/w
		Hex	Dec				
63	cont	2BE 283E	702 10302	Control type When one Heat and one Cool output are programmed When Heat or cool output are programmed without servomotor control. When Heat or cool output are programmed with servomotor control.	0 = Pid > Controllo PID 1 = nr > Heat/Cool ON/OFF control with neutral zone 0 = Pid > PID 1 = On.FA > ON/OFF asymmetric hysteresis 2 = On.FS > ON/OFF symmetric hysteresis 0 = Pid > PID 1 = On.FA > ON/OFF asymmetric hysteresis 2 = On.FS > ON/OFF asymmetric hysteresis 3 = 3Pt. > Open loop 3 point servomotor control (no feedback)	0	r/w
64	Auto	2BF 283F	703 10303	Autotuning selection	-4 = Oscillating auto-tune with automatic restart at power up and after all point change -3 = Oscillating auto-tune with manual start -2 = Oscillating -tune with automatic start at the first power up only -1 = Oscillating auto-tune with automatic restart at every power up 0 = Not used 1 = Fast auto tuning with automatic restart at every power up 2 = Fast auto-tune with automatic start the first power up only 3 = FAST auto-tune with manual start 4 = FAST auto-tune with automatic restart at power up and after a set point change 5 = Evo-tune with automatic restart at every power up 6 = Evo-tune with automatic start the first power up only 7 = Evo-tune with manual start 8 = Evo-tune with automatic restart at power up and after a set point change	0	r/w
65	tunE	2C0 2840	704 10304	Manual start of the Autotuning	0 = oFF > Auto tuning not active 1 = on > Auto tuning active	0	r/w
66	HSEt	2C1 2841	705 10305	Hysteresis of the ON/OFF control	From 1 to 9999 (E.U.)	dp	r/w
67	cPdt	2C2 2842	706 10306	Time for compressor protection	From 1 to 9999 (secondi)		
68	Pb	2C3 2843	707 10307	Proportional band	From 1 to 9999 (E.U.)	dp	r/w

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n.	Param.	Address		Description	Values	Dec	r/w
		Hex	Dec				
69	ti	2C4	708	Integral time	From 0 = (oFF) to 10000 = (inF) (s)	0	r/w
		2844	10308				
70	td	2C5	709	Derivative time	From 0 = (oFF) to 9999 (s)	0	r/w
		2845	10309				
71	Fuoc	2C6	710	Fuzzy overshoot control	From 0 to 100	2	r/w
		2846	10310				
72	tcH	2C7	711	Heating output cycle time	From 10 to 1300 (s)	1	r/w
		2847	10311				
73	rcG	2C8	712	Power ratio between heating and cooling action	From 1 to 9999	2	r/w
		2848	10312				
74	tcc	2C9	713	Cooling output cycle time	From 0 to 1300 (s)	1	r/w
		2849	10313				
75	rS	2CA	714	Manual reset (Integral pre-load)	From -1000 to 1000 (%)	1	r/w
		284A	10314				
76	Str.t	2CB	715	Servomotor stroke time	From 5 to 300 (s)	0	r/w
		284B	10315				
77	db.S	2CC	716	Servomotor dead band	From 0 to 100 (%)	1	r/w
		284C	10316				
78	oP.L	2CD	717	Minimum power output	From -100 to oP.H (%)	0	r/w
		284D	10317				
79	oP.H	2CE	718	Maximum power output	From oP.L to 100 (%)	0	r/w
		284E	10318				
80	Od	2CF	719	Delay at power up	from 0 = OFF to 99.59 (hh:mm)	0	r/w
		284F	10319				
81	St.P	2D0	720	Maximum power output used during soft start	From -100 to 100 (%)	0	r/w
		2850	10320				
82	SSt	2D1	721	Soft start time	From 0 = (oFF) to 800 = (inF) (h:min)	2	r/w
		2851	10321				
83	SS.th	2D2	722	Threshold for soft start disabling	From -2000 = (oFF) to 9999 (E.U.)	dP	r/w
		2852	10322				

SP group - Set point parameters

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
84	nSP	2D3	723	Number of used set points	From 1 to 4	0	r/w
		2853	10323				
85	SPLL	2D4	724	Minimum set point value	From -1999 to SPHL (E.U.)	dP	r/w
		2854	10324				
86	SPHL	2D5	725	Maximum set point value	From SPLL to 9999 (E.U.)	dP	r/w
		2855	10325				
87	SP	2D6	726	Set point 1	From SPLL to SPLH (E.U.)	dP	r/w
		2856	10326				
88	SP 2	2D7	727	Set point 2	From SPLL to SPLH (E.U.)	dP	r/w
		2857	10327				
89	SP 3	2D8	728	Set point 3	From SPLL to SPLH (E.U.)	dP	r/w
		2858	10328				
90	SP 4	2D9	729	Set point 4	From SPLL to SPLH (E.U.)	dP	r/w
		2859	10329				
91	A.SP	2DA	730	Selection of the active set point	0 = SP 1 = SP 2 2 = SP 3 3 = SP 4	0	r/w
		285A	10330				
92	SP.rt	2DB	731	Remote set point type	0 = RSP = The value coming from serial link is used as remote set point 1 = trin = The value will be added to the local set point selected by A.SP and the sum becomes the operative set point 2 = PErc = The value will be scaled on the input range and this value will be used as remote SP	0	r/w
		285B	10331				
93	SPLr	2DC	732	Local/remote set point selection	0 = Loc > local 1 = rEn > Remote	0	r/w
		285C	10332				
94	SP.u	2DD	733	Rate of rise for POSITIVE set point change (ramp UP)	From 1 to 10000 = (inF) E.U/min	2	r/w
		285D	10333				
95	SP.d	2DE	734	Rate of rise for NEGATIVE set point change (ramp DOWN)	From 1 to 10000 = (inF) E.U/min	2	r/w
		285E	10334				

TIN group - Timer function parameters

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
96	tr.F	2DF	735	Independent timer function	0 = NonE = Timer not used 1 = i.d.A = Delayed start timer 2 = i.uP.d = Delayed start at power up 3 = i.d.d = Feed-through timer 4 = i.P.L = Asymmetrical oscillator with start OFF 5 = i.L.P = Asymmetrical oscillator with start ON	0	r/w
		285F	10335				
97	tr.u	2E0	736	Timer unit	0 = hh.nn = Hours and minutes 1 = nn.SS = Minutes and seconds 2 = SSS.d = Second and tenth of seconds	0	r/w
		2860	10336				
98	tr.t1	2E1	737	Time 1	1 ÷ 9959 (hh.min) when tr.u = 0 1 ÷ 9959 (mm.ss) when tr.u = 1	2	r/w
		2861	10337		1 ÷ 9959 (tenth of s) when tr.u = 2		
99	tr.t2	2E2	738	Time 2	0 = (oFF) ÷ 9959 = (inF) (hh.min) when tr.u = 0 0 = (oFF) ÷ 9959 = (inF) (mm.ss) when tr.u = 1	2	r/w
		2862	10338		0 = (oFF) ÷ 9959 = (inF) (tenth of s) when tr.u=2		
100	tr.St	2E3	739	Timer status	0 = rES 1 = run 2 = HoLd	0	r/w
		2863	10339				

PRG group - Programmer function parameters

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
101	Pr.F	2E4	740	Program action at power up	0 = nonE = Programmer not used 1 = S.uP.d = Start at power up with a first step in stand-by 2 = S.uP.S = Start at power up 3 = u.diG = Start at Run command detection only 4 = u.dG.d = Start at Run command with a first step in stand-by	0	r/w
		2864	10340				
102	Pr.u	2E5	741	Engineering unit of the soaks	0 = hh.nn = Hours and minutes 1 = nn.SS = Minutes and seconds	0	r/w
		2865	10341				

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
103	Pr.E	2E6	742	Instrument behaviour at the end of the program execution	0 = cnt = Continue 1 = A.SP = Go to the set point selected by A.SP 2 = St.by = Go to stand-by mode	0	r/w
		2866	10342				
104	Pr.Et	2E7	743	Time of the end program indication	From 0 = (oFF) to 10000 = (inF) (mm.ss)	2	r/w
		2867	10343				
105	Pr.S1	2E8	744	Set point of the first soak	SPLL ÷ SPHL (E.U.) -8000 = Program end	dP	r/w
		2868	10344				
106	Pr.G1	2E9	745	Gradient of the first ramp	From 1 to 10000 (inF = Step transfer) Engineering Unit/minute	1	r/w
		2869	10345				
107	Pr.t1	2EA	746	Time of the 1st soak	From 0 to 9959 (hh.mm or mm.ss)	2	r/w
		286A	10346				
108	Pr.b1	2EB	747	Wait band of the 1st soak	From 0 = (oFF) to 9999 (E.U.)	0	r/w
		286B	10347				
109	Pr.E1	2EC	748	Events of the 1st group	0000 to 1111	2	r/w
		286C	10348				
110	Pr.S2	2ED	749	Set point of the 2nd soak	SPLL to SPHL (E.U.) -8000 = program END	dP	r/w
		286D	10349				
111	Pr.G2	2EE	750	Gradient of the 2nd ramp	1 to 10000 = (inF) (inF = Step transfer) Engineering Unit/minute	1	r/w
		286E	10350				
112	Pr.t2	2EF	751	Time of the 2nd soak	0 to 9959 (hh.mm) or (mm.ss)	2	r/w
		286F	10351				
113	Pr.b2	2F0	752	Wait band of the 2nd soak	0 = (oFF) to 9999 (E.U.)	0	r/w
		2870	10352				
114	Pr.E2	2F1	753	Events of the 2nd group	0000 to 1111	2	r/w
		2871	10353				
115	Pr.S3	2F2	754	Set point of the 3rd soak	SPLL to SPHL (E.U.) -8000 = program END	dP	r/w
		2872	10354				
116	Pr.G3	2F3	755	Gradient of the 3rd ramp	1 to 10000 = (inF = Step transfer) Engineering Unit/minute	1	r/w
		2873	10355				
117	Pr.t3	2F4	756	Time of the 3rd soak	0 to 9959 (hh.mm) or (mm.ss)	2	r/w
		2874	10356				

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
118	Pr.b3	2F5	757	Wait band of the 3rd soak	0 = (oFF) to 9999 (E.U.)	0	r/w
		2875	10357				
119	Pr.E3	2F6	758	Events of the 3rd group	0000 to 1111	2	r/w
		2876	10358				
120	Pr.S4	2F7	759	Set point of the 4th soak	SPLL to SPHL (E.U.) -8000 = program END	dP	r/w
		2877	10359				
121	Pr.G4	2F8	760	Gradient of the 4th ramp	1 to 10000 = (inF) (inF = Step transfer) Engineering Unit/minute	1	r/w
		2878	10360				
122	Pr.t4	2F9	761	Time of the 4th soak	0 to 9959 (hh.mm) or (mm.ss)	2	r/w
		2879	10361				
123	Pr.b4	2FA	762	Wait band of the 4th soak	0 = (oFF) to 9999 (E.U.)	0	r/w
		287A	10362				
124	Pr.E4	2FB	763	Events of the 4th group	0000 to 1111	2	r/w
		287B	10363				
125	Pr.St	2FC	764	Program status	0 = rES > Program reset 1 = run > Program start 2 = HoLd > Program hold	0	r/w
		287C	10364				

PAn group - Operator HMI parameters

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
126	dSPu	2FD	765	Instrument status at power ON	0 = AS.Pr = Starts in the same way it was prior to the power down 1 = Auto = Starts in Auto mode 2 = oP.0 = Starts in manual mode with a power output equal to zero 3 = St.bY = Starts in stand-by mode	0	r/w
		287D	10365				
127	oPr.E	2FE	766	Operative modes enabling	0 = ALL = All modes will be selectable 1 = Au.oP = Auto and manual (OPLO) mode only 2 = Au.Sb = Auto and Stand-by modes only	0	r/w
		2888	10366				
128	oPer	2FF	767	Operative mode selection	0 = Auto > Auto mode 1 = oPLo > Manual mode 2 = StbY > stand by mode	0	r/w
		287F	10367				

Ser group - Serial link parameters

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
129	Add	300	768	Instrument address	0 = (oFF) to 254	0	r/w
		2880	10368				
130	bAud	301	769	Baud rate	0 = 1200 baud 1 = 2400 baud 2 = 9600 baud 3 = 19200 baud 4 = 38400 baud	0	r/w
		2881	10369				

COn group – Worked tim parameters

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
131	co.tY	302	770	Measurement type	0 = Off- not used 1 = Total worked days 2 = Total worked hours 3 = Total worked days with Stand-by 4 = Total worked hours with stand-by 5 = Total days control output in ON 6 = Total hours control output in ON 7 = Total days control output in ON with stand-by 8 = Total hours control output in ON with stand-by	0	r/w
		2882	10370				
132	h.Job	303	771	Threshold of the working period	0 = (oFF) to 999	0	r/w
		2883	10371				
133	t.Job	304	772	Worked time (not resettable)	0 to 9999 (days)	0	r
		2884	10372				

CAL group - User calibration parameters

n.	Param.	Address		Description	Values	Dec	r/w
		Hex	Dec				
134	A.L.P	305	773	Adjust Low Point	-1999 to A.H.P-10 (E.U.)	dP	r/w
		2885	10373				
135	A.L.o	306	774	Adjust Low Offset	-300 to 300 (E.U.)	dP	r/w
		2886	10374				
136	A.H.P	307	775	Adjust High Point	A.L.P+10 to 9999 (E.U.)	dP	r/w
		2887	10375				
137	A.H.o	308	776	Adjust High Offset	-300 to 300 (E.U.)	dP	r/w
		2888	10376				

1.2. Configuration parameter in SPEED mode:

1.3. inP GROUP - Main and auxiliary input configuration

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
9	io3F	288	648	I/O3 function	0 = dG2c > Digital input 2 driven by contact, 1 = G2U > Digital input 2 driven by voltage 2 = on > Output used as PWS for TX,	0	r/w
		2808	10248				
11	diF1	28A	650	Digital input 1 function	0 = nonE= not used 1 = Sd.r.S = SPEED/TIME run/stop [status] 2 = Sdr.t = SPEED/TIME run/stop [transition] 3 = ch.Sd = Speed sequential selection [transition] 4 = Sd14 = Binary speed selection	0	r/w
		280A	10250				
12	diF2	28B	651	Digital input 2 function	0 = nonE= not used 1 = Sd.r.S = SPEED/TIME run/stop [status] 2 = Sdr.t = SPEED/TIME run/stop [transition] 3 = ch.Sd = Speed sequential selection [transition] 4 = Sd14 = Binary speed selection	0	r/w
		280B	10251				
13	di.A	28C	652	Digital input action	0 = DI1 direct action, DI2 direct action; 1 = DI1 reverse action, DI2 direct action; 2 = DI1 direct action, DI2 reverse action; 3 = DI1 reverse action, DI2 reverse action.	0	r/w
		280C	10252				

SPED group (parameters related with the speed output)

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
47	Spd.P	2AE	686	Behaviour of the speed output at power up.	0= AS.Pr = start using the same speed used at power down. 1= OFF.A= starts with speed equal to zero and waits a “start” command 2= OFF.b = starts with speed equal to zero and waits until the measured value reaches the programmed band.	0	r/w
		282E	10286				
49	Spd.t	2B0	688	Engineering unit used to show the speed	0 = Perc 1 = tinE 2 = E.U.	0	r/w
		2830	10288				
50	Sd.dF	2B1	689	Speed decimal figure	0 to 3	0	r/w
		2831	10289				

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
51	Spd.r	2B2 2832	690 10290	Setting of the Time or speed detected with the speed output is equal to 100%	For Time: from 00.01 a 99.59 (mm.ss) For EU: from 0 to 9999 E.U.	2 Sd.dF	r/w
52	n.SPd	2B3 2833	691 10291	Number of used speed	From 1 to 4	0	r/w
53	Sd.t1	2B4 2834	692 10292	Speed/ time 1	When Spd.t = Perc 0 ÷ 100 (%) When Spd.t = tinE 00.01 ÷ 99.59 (mm.ss). When Spd.t = E.U. 0 ÷ 9999 E.U.	0 2 Sd.dF	r/w
54	Sd.t2	2B5 2835	693 10293	Speed/ time 2	When Spd.t = Perc 0 ÷ 100 (%) When Spd.t = tinE 00.01 ÷ 99.59 (mm.ss). When Spd.t = E.U. 0 ÷ 9999 E.U.	0 2 Sd.dF	r/w
55	Sd.t3	2B6 2836	694 10294	Speed/ time 3	When Spd.t = Perc 0 ÷ 100 (%) When Spd.t = tinE 00.01 ÷ 99.59 (mm.ss). When Spd.t = E.U. 0 ÷ 9999 E.U.	0 2 Sd.dF	r/w
56	Sd.t4	2B7 2837	695 10295	Velocità/tempo 4	When Spd.t = Perc 0 ÷ 100 (%) When Spd.t = tinE 00.01 ÷ 99.59 (mm.ss). When Spd.t = E.U. 0 ÷ 9999 E.U.	0 2 Sd.dF	r/w
57	A.Sd.t	2B8 2838	696 10296	Active Speed/ time	from 1 to 4	0	r/w
58	Sd.cA	2B9 2839	697 10297	Self-calibration Time to speed relation		0	r

Ser group (serial link parameters)

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
129	Add	300	768	Instrument address	0 = (oFF) to 254	0	r/w
		2880	10368				
130	bAud	301	769	Baud rate	0 = 1200 baud 1 = 2400 baud 2 = 9600 baud 3 = 19200 baud 4 = 38400 baud	0	r/w
		2881	10369				

COn group – Worked time parameters

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
131	co.tY	302	770	Measurement type	0 = Off- not used 1 = Total worked days 2 = Total worked hours 3 = Total worked days with Stand-by 4 = Total worked hours with stand-by 5 = Total days control output in ON 6 = Total hours control output in ON 7 = Total days control output in ON with stand-by 8 = Total hours control output in ON with stand-by	0	r/w
		2882	10370				
132	h.Job	303	771	Threshold of the working period	0 = (oFF) to 999	0	r/w
		2883	10371				
133	t.Job	304	772	Worked time (not resettable)	0 to 9999 (days)	0	r
		2884	10372				

CAL group – User calibration group

n.	Param	Address		Description	Values	Dec	r/w
		Hex	Dec				
134	A.L.P	305	773	Adjust low point	-1999 to (A.H.P -10)	dP	r/w
		2885	10373				
135	A.L.O	306	774	Adjust low offset	-300 to 300 E.U.	dP	r/w
		2886	10374				
136	A.H.P	307	775	Adjust high point	(A.L.P. + 10) to 9999	dP	R/w
		2887	10375				
137	A.H.O	308	776	Adjust high offset	-300 to 300 E.U.	dP	R/w
		2888	10376				

1.4. Instrument identification area (present on all new instruments)

n.	Ahhress		Description	Dec	r/w
	HEX	Dec.			
Instrument identification – equal to address 0x800					
1	CF08	53000	Identification code 1 Range : AB A - Identifica la famiglia di strumenti per tabella protocollo B - Identifica la versione della tabella protocollo	0	r
2	CF09	53001	Identificativo strumento 2 Campo : CD C - Indice “speciali” per copiatura D - Tipologia di strumento	0	r
3	CF0A	53002	Identificativo strumento 3 – Numero di parametri -1	0	r
4	CF0B	53003	Identificativo strumento 4 Campo : EF E - Versione banco di taratura F - Contatore eccezioni tabella parametri. Possibile copia da vecchio a nuovo	0	r
5	CF0C	53004	Identificativo strumento 5 - Particolarità	0	r
6	CF0D	53005	Identificativo strumento 6 – Codici speciali per supervisore	0	r
7	CF0E	53006	Identificativo strumento 7 – Codice strumento - progressivo	0	r
8	CF0F	53007	Identificativo strumento 8 – Evidenziatore per nuova codifica Valore: 0x31	0	r
9	CF10	53008	A disposizione	0	r
10	CF11	53009	A disposizione	0	r
Revisione firmware strumento – in formato ASCII esempio: revisione r2.30					
11	CF12	53010	Revisione firmware 1 - Parte alta esempio: 0x3032 - '02'	0	r
12	CF13	53011	Revisione firmware 2 – Parte bassa esempio: 0x3330 - '30'	0	r
13	CF14	53012	A disposizione	0	r
14	CF15	53013	A disposizione	0	r
Codice di Prodotto – Ripetizione degli indirizzi 0x80A					
15	CF16	53014	Tipo strumento - 1 Campo: 0x4B = 'K'	0	r
16	CF17	53015	Tipo strumento - 2 Campo: 0x4D = 'M' - KM 0x52 = 'R' - KR 0x58 = 'X' - KX	0	r

n.	Ahhress		Description	Dec	r/w
	HEX	Dec.			
17	CF18	53016	Tipo strumento - 3 Campo: 0x37 = '7' - KM7, KR7, KX7	0	r
18	CF19	53017	Funzioni a richiesta Campo: 0x2D = '-' - Nessuna funzione 0x54 = 'T' - Temporizzatore 0x50 = 'P' - Temporizzatore+Programmatore	0	r
19	CF1A	53018	Alimentazione Campo: 0x48 = 'H' - 110 ÷ 240 Vac/Vdc 0x4C = 'L' - 24 Vac/Vdc	0	r
20	CF1B	53019	Ingresso di misura Campo: 0x43 = 'C' - Tc, Pt100, Pt1000, mA, mV, V + ingresso digitale 1 0x45 = 'E' - Tc, PTC, NTC, mA, mV, V + ingresso digitale 1	0	r
21	CF1C	53020	Uscita 1 Campo: 0x53 = 'S' - Pilotaggio motore 24 Vdc 4A	0	r
22	CF1D	53021	Uscita 2 Campo: 0x2D = '-' - Non presente 0x4D = 'M' - Relè per comando servomotore 0x4F = 'O' - SSR 0x52 = 'R' - Relè	0	r
23	CF1E	53022	Uscita 3 Campo: 0x2D = '-' - Non presente 0x4D = 'M' - Relè per comando servomotore 0x4F = 'O' - SSR 0x52 = 'R' - Relè	0	r
24	CF1F	53023	Uscita 4 Campo: 0x44 = 'D' - Ingresso digitale/uscita	0	r
25	CF20	53024	Comunicazione seriale Campo: 0x2D = '-' - TTL	0	r
26	CF21	53025	Tipo di terminali 0x2D = '-' - Standard (morsettiera a vite non estraibile) 0x45 = 'E' - Morsettiera a vite estraibile completa 0x4D = 'M' - Morsettiera a molla estraibile completa 0x4E = 'N' - Morsettiera estraibile (solo parte fissa)	0	r
27	CF22	53026	Riservato	0	r
28	CF23	53027	Riservato	0	r
29	CF24	53028	Riservato	0	r
30	CF25	53029	Riservato	0	r

n.	Ahhress		Description	Dec	r/w
	HEX	Dec.			
31	CF26	53030	Riservato	0	r
32	CF27	53031	Riservato	0	r
33	CF28	53032	Riservato	0	r
34	CF29	53033	Riservato	0	r
35	CF2A	53034	Riservato	0	r
36	CF2B	53035	Riservato	0	r
37	CF2C	53036	Riservato	0	r
38	CF2D	53037	Riservato	0	r
39	CF2E	53038	Riservato	0	r
40	CF2F	53039	Riservato	0	r
41	CF30	53040	Riservato	0	r
42	CF31	53041	Riservato	0	r
43	CF32	53042	A disposizione	0	r
44	CF33	53043	A disposizione	0	r
45	CF34	53044	A disposizione	0	r
46	CF35	53045	A disposizione	0	r
47	CF36	53046	A disposizione	0	r
48	CF37	53047	A disposizione	0	r

Codice modello

49	CF38	53048	Codice modello - 1 Campo: 0x4B = 'K'	0	r
50	CF39	53049	Codice modello - 2 Campo: 0x4D = 'M' - KM 0x52 = 'R' - KR 0x58 = 'X' - KX	0	r
51	CF3A	53050	Codice modello - 3 Campo: 0x37 = '7' - KM7, KR7, KX7	0	r
52	CF3B	53051	Codice modello - 4 Campo: 0x0000	0	r
53	CF3C	53052	Codice modello - 5 Campo: 0x0000	0	r
54	CF3D	53053	Codice modello - 6 Campo: 0x0000	0	r
55	CF3E	53054	Codice modello - 7 Campo: 0x0000	0	r
56	CF3F	53055	Codice modello - 8 Campo: 0x0000	0	r

n.	Ahhress		Description	Dec	r/w
	HEX	Dec.			
57	CF40	53056	A disposizione	0	r
58	CF41	53057	A disposizione	0	r
Numero di serie esempio : Numero di serie 1.237.422=0x12E1AE					
59	CF42	53058	Numero di serie 1 - LL esempio : 0x00AE	0	r
60	CF43	53059	Numero di serie 2 - L esempio : 0x00E1	0	r
61	CF44	53060	Numero di serie 3 - H esempio : 0x0012	0	r
62	CF45	53061	Numero di serie 4 - HH esempio : 0x0000	0	r
63	CF46	53062	A disposizione	0	r
64	CF47	53063	A disposizione	0	r
Data di taratura esempio : 28 Gennaio 2016					
65	CF48	53064	Giorno esempio : 28	0	r
66	CF49	53065	Mese esempio : 1	0	r
67	CF4A	53066	Anno esempio : 2016	0	r
A disposizione per sviluppi futuri					
68	CF4B	53067	A disposizione – (Revisione Hardware)	0	r
69	CF4C	53068	A disposizione - (Revisione Hardware)	0	r
70	CF4D	53069	A disposizione	0	r
71	CF4E	53070	A disposizione	0	r
72	CF4F	53071	A disposizione	0	r
73	CF50	53072	A disposizione	0	r
74	CF51	53073	A disposizione	0	r
75	CF52	53074	A disposizione	0	r
76	CF53	53075	A disposizione	0	r
77	CF54	53076	A disposizione	0	r
78	CF55	53077	A disposizione	0	r
79	CF56	53078	A disposizione	0	r
80	CF57	53079	A disposizione	0	r
81	CF58	53080	A disposizione	0	r
82	CF59	53081	A disposizione	0	r

n.	Ahhress		Description	Dec	r/w
	HEX	Dec.			
83	CF5A	53082	A disposizione	0	r
84	CF5B	53083	A disposizione	0	r
85	CF5C	53084	A disposizione	0	r
86	CF5D	53085	A disposizione	0	r
87	CF5E	53086	A disposizione	0	r

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