

ELR 9000 3U / EL 9000 B register list for devices with KE firmware from V2.15 (Anybus) / V2.04 (GPiB) (check the installed version in your device's MENU in item ABOUT HW, SW)																	
Modbus address	Read coils (0x01)	Read holding registers (0x03)	Write single coil (0x05)	Write single register (0x06)	Write multiple registers (0x10)	Description	Access	Access condition for writing	Data type	Data length in bytes	Number of registers	Data	Example	Profibus slot / Profinet subslot	Profibus/Profinet index in slot	EtherCAT SDO/PDO?	
0	x					Device class	R		uint(16)	2	1		20, 32, 34, 36 = ELR 9000 39 = EL 9000 B	1	0	x	
1	x					Device type	R		char	40	20	ASCII	ELR 9080-170	1	1	x	
21	x					Manufacturer	R		char	40	20	ASCII		1	2	x	
41	x					Manufacturer address	R		char	40	20	ASCII		1	3	x	
61	x					Manufacturer ZIP code	R		char	40	20	ASCII		1	4	x	
81	x					Manufacturer phone number	R		char	40	20	ASCII		1	5	x	
101	x					Manufacturer website	R		char	40	20	ASCII		1	6	x	
121	x					Nominal voltage	R		float	4	2	Floating point number IEEE754	80	1	7	x	
123	x					Nominal current	R		float	4	2	Floating point number IEEE754	170	1	8	x	
125	x					Nominal power	R		float	4	2	Floating point number IEEE754	3500	1	9	x	
127	x					Max. internal resistance	R		float	4	2	Floating point number IEEE754	12	1	10	x	
129	x					Min. internal resistance	R		float	4	2	Floating point number IEEE754	0.005	1	11	x	
131	x					Article no.	R		char	40	20	ASCII	33230401	1	12	x	
151	x					Serial no.	R		char	40	20	ASCII	100010002	1	13	x	
171	x			x		User text	RW	REM	char	40	20	ASCII		1	14	x	
191	x					Firmware version (KE)	R		char	40	20	ASCII	V2.01 05.09.2012	1	15	x	
211	x					Firmware version (HMI)	R		char	40	20	ASCII	V2.02 13.08.2012	1	16	x	
231	x					Firmware version (DR)	R		char	40	20	ASCII	V1.5.6	1	17	x	
402	x		x			Remote mode	RW		uint(16)	2	1	Coils : Remote	0x0000 = off; 0xFF00 = on	2	1	x	
405	x		x			DC input	RW	REM	uint(16)	2	1	Coils : Input	0x0000 = off; 0xFF00 = on	2	4	x	
407	x					Condition of DC input after power fail alarm	RW	REM	uint(16)	2	1	Coils : Auto-On	0x0000 = off; 0xFF00 = auto-on	3	30	x	
408	x		x			Condition of DC input after powering the device	RW	REM	uint(16)	2	1	Reg : Power-On	0xFFFF = off; 0xFFFE = restore	2	6	x	
409	x		x			Operation mode (UIP/UIR)	RW	REM	uint(16)	2	1	Coils : Operation mode	0x0000 = UP; 0xFF00 = UIR	2	7	x	
410	x					Restart of the device (warm start)	W	REM	uint(16)	2	1	Coils : Restart	0xFF00 = execute	2	8	x	
411	x					Acknowledge alarms	W	REM	uint(16)	2	1	Coils : Alarms	0xFF00 = acknowledge	2	9	x	
416	x		x			Analog interface: Reference voltage (pin VREF)	RW	REM	uint(16)	2	1	Coils : VREF	0x0000 = 10V; 0xFF00 = 5V	2	14	x	
417	x		x			Analog interface: REM-SB level	RW	REM	uint(16)	2	1	Coils : REM-SB level	0x0000 = normal; 0xFF00 = inverted	2	36	x	
418	x		x			Analog interface: REM-SB action	RW	REM	uint(16)	2	1	Coils : REM-SB Action	0x0000 = DC off; 0xFF00 = DC auto	2	37	x	
422	x		x			Speed of internal voltage controller	RW	REM	uint(16)	2	1	Coils : Controller speed	0x0000 = slow; 0xFF00 = fast	2	38	x	
500	x	x	x			Set voltage value	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Voltage value (for translation see programming guide)	2	23	x	
501	x	x	x			Set current value	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Current value (for translation see programming guide)	2	24	x	
502	x	x	x			Set power value	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Power value (for translation see programming guide)	2	25	x	
503	x	x	x			Set resistance value	RW	REM	uint(16)	2	1	variable: 0xCCCC (x - 100%) Minimum value needs to be calculated, refer to programming guide	Resistance value (for translation see programming guide)	2	26	x	
505	x					Device state	R		uint(32)	4	2	Bit 0-4: Control location Bit 5 : - Bit 6 : Master-slave type Bit 7 : Input state Bit 8 : - Bit9-10: Regulation mode Bit11 : Remote Bit12 : - Bit13 : Function mode Bit14 : External sense Bit15 : Alarms Bit16 : OVP Bit17 : OCP Bit18 : OPP Bit19 : OT Bit20 : OTpre Bit21 : Power fail 1 Bit22 : Power fail 2 Bit23 : Power fail 3 Bit24 : UVD Bit25 : OVD Bit26 : UCD Bit27 : OCD Bit28 : OPD Bit29 : MSS Bit30 : REM-SB	0x00 = free; 0x01 = local; 0x03 = USB; 0x04 = analog; 0x05 = Profibus; 0x06 = Ethernet; 0x08 = Master/Slave; 0x09 = RS232; 0x10 = CANopen; 0x12 = Modbus TCP 1P; 0x13 = Profinet 1P; 0x14 = Ethernet 1P; 0x15 = Ethernet 2P; 0x16 = Modbus TCP 2P; 0x17 = Profinet 2P; 0x18 = GPiB; 0x19 = CAN; 0x1A = EtherCAT	2	27	x	
507	x					Actual voltage	R		uint(16)	2	1	0x0000 - 0xFFFF (0 - 125%)	Actual voltage (for translation see programming guide)	2	28	x	
508	x					Actual current	R		uint(16)	2	1	0x0000 - 0xFFFF (0 - 125%)	Actual current (for translation see programming guide)	2	29	x	
509	x					Actual power	R		uint(16)	2	1	0x0000 - 0xFFFF (0 - 125%)	Actual power (for translation see programming guide)	2	30	x	
520	x					Count of OV alarms since power up	R		uint(16)	2	1	0x0000 - 0xFFFF	Count	3	20	x	
521	x					Count of OC alarms since power up	R		uint(16)	2	1	0x0000 - 0xFFFF	Count	3	21	x	
522	x					Count of OP alarms since power up	R		uint(16)	2	1	0x0000 - 0xFFFF	Count	3	22	x	
523	x					Count of OT alarms since power up	R		uint(16)	2	1	0x0000 - 0xFFFF	Count	3	23	x	
524	x					Count of PF alarms since power up	R		uint(16)	2	1	0x0000 - 0xFFFF	Count	3	24	x	
550	x		x			Overvoltage protection threshold (OVP)	RW	REM	uint(16)	2	1	ELR: 0x0000 - 0xE147 (0 - 110%) EL9B: 0x0000 - 0xD2F1 (0 - 103%)	OVP threshold (for translation see programming guide)	3	0	x	
553	x		x			Overcurrent protection threshold (OCP)	RW	REM	uint(16)	2	1	0x0000 - 0xE147 (0 - 110%)	OCP threshold (for translation see programming guide)	3	3	x	
556	x		x			Overpower protection threshold (OPP)	RW	REM	uint(16)	2	1	0x0000 - 0xE147 (0 - 110%)	OPP threshold (for translation see programming guide)	3	6	x	
559	x		x			Undervoltage detection (UVD)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	UVD threshold (for translation see programming guide)	3	9	x	
560	x		x			Adjustable UVD notification	RW	REM	uint(16)	2	1	Coils : Adjustable UVD notification	0x0000 = nothing; 0x0001 = signal; 0x0002 = warning; 0x0003 = alarm	3	10	x	
561	x		x			Overvoltage detection (OVD)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	OVD threshold (for translation see programming guide)	3	11	x	
562	x		x			Adjustable OVD notification	RW	REM	uint(16)	2	1	Coils : Adjustable OVD notification	0x0000 = nothing; 0x0001 = signal; 0x0002 = warning; 0x0003 = alarm	3	12	x	
563	x		x			Undercurrent detection (UCD)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	UCD threshold (for translation see programming guide)	3	13	x	
564	x		x			Adjustable UCD notification	RW	REM	uint(16)	2	1	Coils : Adjustable UCD notification	0x0000 = nothing; 0x0001 = signal; 0x0002 = warning; 0x0003 = alarm	3	14	x	
565	x		x			Overcurrent detection (OCD)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	OCD threshold (for translation see programming guide)	3	15	x	
566	x		x			Adjustable OCD notification	RW	REM	uint(16)	2	1	Coils : Adjustable OCD notification	0x0000 = nothing; 0x0001 = signal; 0x0002 = warning; 0x0003 = alarm	3	16	x	
567	x		x			Overpower detection (OPD)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	OPD threshold (for translation see programming guide)	3	17	x	
568	x		x			Adjustable OPD notification	RW	REM	uint(16)	2	1	Coils : Adjustable OPD notification	0x0000 = nothing; 0x0001 = signal; 0x0002 = warning; 0x0003 = alarm	3	18	x	
650	x		x			Master-slave: Link mode	RW	REM	uint(16)	2	1	Coils : Mode	0x0000 = Slave; 0xFF00 = Master	4	0	x	
651	x		x			Master-slave: Address	RW	REM	uint(16)	2	1	Reg : Address	0x0001...0x000F	4	1	x	
652	x		x			Master-slave: Link mode of Share-Bus	RW	REM	uint(16)	2	1	Coils : Mode	0x0000 = Slave; 0xFF00 = Master	4	2	x	
653	x		x			Master-slave: Enable MS	RW	REM	uint(16)	2	1	Coils : MS on/off	0x0000 = off; 0xFF00 = on	4	3	x	
654	x		x			Master-slave: Init MS	W	REM	uint(16)	2	1	Coils : MS start init	0xFF00 = Start init	4	4	x	
655	x		x			Master-slave: Condition	R		uint(16)	2	1	Reg : MS status	0x0000 = not initialised; 0x0001 = init running; 0xFFFD = Different models detected; init not OK; 0xFFFF = init OK	4	5	x	
656	x					Master-slave: Total voltage	R		float	4	2	Floating point number IEEE754	500	4	6	x	
658	x					Master-slave: Total current	R		float	4	2	Floating point number IEEE754	850	4	7	x	
660	x					Master-slave: Total power	R		float	4	2	Floating point number IEEE754	16.50	4	8	x	
662	x					Master-slave: Number of initialised slaves	R		uint(16)	2	1		1..9	4	9	x	
850	x		x			Function generator Arbitrary: Start/stop	RW	REM	uint(16)	2	1	Coils : Start/Stop	0x0000 = Stop; 0xFF00 = Start	5	0	x	
851	x		x			Function generator Arbitrary: Select U	RW	REM	uint(16)	2	1	Coils : U	0x0000 = not assigned; 0xFF00 = Assign function to voltage	5	1	x	
852	x		x			Function generator Arbitrary: Select I	RW	REM	uint(16)	2	1	Coils : I	0x0000 = not assigned; 0xFF00 = Assign function to current	5	2	x	
854	x		x			Function generator XY: Select U-I mode	RW	REM	uint(16)	2	1	Coils : U-I	0x0000 = not assigned; 0xFF00 = Assign function to U-I curve	5	4	x	
855	x		x			Function generator XY: Select I-U mode	RW	REM	uint(16)	2	1	Coils : I-U	0x0000 = not assigned; 0xFF00 = Assign function to I-U curve	5	5	x	
858	x		x			Function generator XY: Submit curve data	W	REM	uint(16)	2	1	Coils : Submit for XY	0xFF00 = Submit curve data	5	8	x	
859	x		x			Function generator Arbitrary: Start sequence	RW	REM	uint(16)	2	1	0x0001...0x0064		5	9	x	
860	x		x			Function generator Arbitrary: End sequence	RW	REM	uint(16)	2	1	0x0001...0x0064		5	10	x	
861	x		x			Function generator Arbitrary: Sequence cycles	RW	REM	uint(16)	2	1	0x0000...0x03E7	0x0000 = infinite	5	11	x	
900	x				x	Function generator Arbitrary: Setup for sequence 1	RW	REM	float	32	16	Bytes 3-0: Us/Is(AC) in V Bytes 7-4: Ue/Is(AC) in V Bytes 15-12: Is(1/T) in Hz Bytes 19-16: Is(1/T) in Hz Bytes 11-8: Angle in degrees Bytes 23-20: Us/Is(DC) in V Bytes 27-24: Ue/Is(DC) in V Bytes 31-28: Sequence time in µs	Floating point number in IEEE754 format, see device manual for value range, chapter about function generator Integer in IEEE754 format: 0...10000 Hz Integer in IEEE754 format: 0...10000 Hz Integer in IEEE754 format: 0°...359° Floating point number in IEEE754 format, see device manual for value range, chapter about function generator Floating point number in IEEE754 format ELR 9000: 100 µs...36.000.000.000 µs While current mode: EL 9000 B: 10 µs...36.000.000.000 µs	6	0	x	
2484	x				x	Function generator Arbitrary: Setup for sequence 100	RW	REM	float	32	16	Bytes 3-0: Us/Is(AC) in V Bytes 7-4: Ue/Is(AC) in V Bytes 15-12: Is(1/T) in Hz Bytes 19-16: Is(1/T) in Hz Bytes 11-8: Angle in degrees Bytes 23-20: Us/Is(DC) in V Bytes 27-24: Ue/Is(DC) in V Bytes 31-28: Sequence time in µs	Floating point number in IEEE754 format, see device manual for value range, chapter about function generator Integer in IEEE754 format: 0...10000 Hz Integer in IEEE754 format: 0...10000 Hz Integer in IEEE754 format: 0°...359° Floating point number in IEEE754 format, see device manual for value range, chapter about function generator Floating point number in IEEE754 format ELR 9000: 100 µs...36.000.000.000 µs EL 9000 B: 10 µs...36.000.000.000 µs	6	99	x	
2600	x				x	Function generator: X/Y table, block 0	RW	REM	uint(16)	32	16	UI mode: set voltage value IU mode: set current value (16 values block)	value = real set value of voltage * 0.8 / Unom * 32768 or value = real set value of current * 0.8 / Inom * 32768	7	0	x	
6680	x				x	Function generator: X/Y table, block 255	RW	REM	uint(16)	32	16	UI mode: set voltage value IU mode: set current value (16 values block)	value = real set value of voltage * 0.8 / Unom * 32768 or value = real set value of current * 0.8 / Inom * 32768	7	255	x	
9000	x		x			Upper limit of voltage set value (U-max)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Voltage value (for translation see programming guide)	2	31	x	
9001	x		x			Lower limit of voltage set value (U-min)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Voltage value (for translation see programming guide)	2	32	x	
9002	x		x			Upper limit of current set value (I-max)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Current value (for translation see programming guide)	2	33	x	
9003	x		x			Lower limit of current set value (I-min)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Current value (for translation see programming guide)	2	34	x	
9004	x		x			Upper limit of power set value (P-max)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Power value (for translation see programming guide)	2	35	x	
9006	x		x			Upper limit of resistance set value (R-max)	RW	REM	uint(16)	2	1	0x0000 - 0xD0E5 (0 - 102%)	Resistance value (for translation see programming guide)	2	37	x	
10007	x		x			Ethernet: TCP keep-alive timeout	RW	REM	uint(16)	2	1	Coils: Keep-alive on/off	0x0000 = off; 0xFF00 = on				
10008	x		x			Profinet/Modbus TCP: DHCP	RW	REM	uint(16)	2	1	Coils: DHCP on/off	0x0000 = off; 0xFF00 = on				
10010	x		x			Protocol: Modbus	RW	REM	uint(16)	2	1	Coils: MODBUS on/off	0x0000 = off; 0xFF00 = on				
10011	x		x			Protocol: SCPI	RW	REM	uint(16)	2	1	Coils: SCPI on/off	0x0000 = off; 0xFF00 = on				