

ELR 9000 3U / EL 9000 B register list for devices with KE firmware from V2.28 (standard) or V2.10 (with 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 multiple registers (0x06)	Description	Access	Data type	Number of registers	Data	Profibus slot / Profinet subnet	Profibus/Profinet node in slot	EtherCAT SDOPOD?		
0	x				Device class	R	uint16	2	1	20, 30, 34, 36 = ELR 9000 39 = EL 9000 B	1	0		
1	x				Device type	R	string	40	20	ASCII	1	x		
21	x				Manufacturer	R	string	40	20	ASCII	1	2		
41	x				Manufacturer address	R	string	40	20	ASCII	1	3		
61	x				Manufacturer ZIP code	R	string	40	20	ASCII	1	4		
81	x				Manufacturer phone number	R	string	40	20	ASCII	1	5		
101	x				Manufacturer website	R	string	40	20	ASCII	1	6		
121	x				Nominal voltage	R	float	4	2	Floating point number IEEE754	1	x		
122	x				Nominal current	R	float	4	2	Floating point number IEEE754	1	x		
123	x				Nominal power	R	float	4	2	Floating point number IEEE754	1	8		
127	x				Max. internal resistance	R	float	4	2	Floating point number IEEE754	1	10		
129	x				Min. internal resistance	R	float	4	2	Floating point number IEEE754	1	11		
131	x				Article no.	R	string	40	20	ASCII	1	12		
151	x				Serial no.	R	string	40	20	ASCII	1	13		
171	x		x		User test	RW	uint16	2	1	0x0000 = off, 0x0001 = on	1	14		
191	x				Firmware version (KE)	R	string	40	20	ASCII	1	15		
211	x				Firmware version (RM)	R	string	40	20	ASCII	1	16		
231	x				Firmware version (DR)	R	string	40	20	ASCII	1	17		
402	x	x			Remote mode	RW	uint16	2	1	0x0000 = off, 0x0001 = on	2	1		
405	x	x			DC input	RW	uint16	2	1	0x0000 = off, 0x0001 = on	2	4		
407	x	x			Condition of DC input after power fail alarm	RW	uint16	2	1	0x0000 = off, 0x0001 = auto-on	3	30		
408	x	x	x		Condition of DC input after powering the device	RW	uint16	2	1	0x0000 = off, 0x0001 = restore	2	8		
409	x	x			Operation mode (LUP/LRP)	RW	uint16	2	1	0x0000 = LUP, 0x0001 = LRP	2	7		
410	x				Restart of the device (warm start)	RW	uint16	2	1	0x0000 = execute	2	8		
411	x				Acknowledge alarms	RW	uint16	2	1	0x0000 = acknowledge	2	9		
416	x	x			Analog interface: Reference voltage (pin VREF)	RW	uint16	2	1	0x0000 = 10V, 0x0001 = 5V	2	14		
417	x	x			Analog interface: REM-SB level	RW	uint16	2	1	0x0000 = normal, 0x0001 = inverted	2	12		
418	x	x			Analog interface: REM-SB action	RW	uint16	2	1	0x0000 = DC off, 0x0001 = DC auto	2	13		
422	x	x			Speed of internal voltage controller	RW	uint16	2	1	0x0000 = slow, 0x0001 = fast	2	38		
425	x	x			DC input after leaving remote	RW	uint16	2	1	0x0000 = off, 0x0001 = unchanged	2	42		
432	x	x			Reset device to factory settings	RW	uint16	2	1	0x0000 = trigger reset	2	43		
440	x	x	x		Analog interface: Pin 14 configuration	RW	uint16	2	1	0x0000 = OVP+ (default); 0x0001 = OCP+ 0x0002 = OPP 0x0003 = OVP+ OCP+ 0x0004 = OVP+ OPP 0x0005 = OCP+ OPP 0x0006 = OVP+ OCP+ OPP	2	44		
441	x	x	x		Analog interface: Pin 6 configuration	RW	uint16	2	1	0x0000 = OT + PF (default); 0x0001 = OVP+ 0x0002 = PF	2	45		
442	x	x	x		Analog interface: Pin 15 configuration	RW	uint16	2	1	0x0000 = CV; 0x0001 = DC output status	2	46		
500	x	x			Set voltage value	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Voltage value (for translation see programming guide)	2	23	
501	x	x			Set current value	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Current value (for translation see programming guide)	2	24	
502	x	x			Set power value	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Power value (for translation see programming guide)	2	25	
503	x	x			Set resistance value	RW	uint16	2	1	variable - 0x0000 (~ 100%) Minimum value needs to be calculated, refer to programming guide	Resistance value (for translation see programming guide)	2	26	
505	x				Device state	R	uint32	4	2	Bit 0 - 0: Control location Bit 5 - : Bit 6 - : Master-slave type Bit 7 - : Input state Bit 8 - : Bit 10-9: Regulation mode Bit 11 - : Remote Bit 12 - : Bit 13 - : Function generator Bit 14 - : External sense Bit 15 - : Alarms Bit 16 - : OVP Bit 17 - : OCP Bit 18 - : OPP Bit 19 - : OT Bit 20 - : OPre Bit 21 - : Power fail 1 Bit 22 - : Power fail 2 Bit 23 - : Power fail 3 Bit 24 - : UVD Bit 25 - : OVD Bit 26 - : UCD Bit 27 - : OCD Bit 28 - : OPD Bit 29 - : MSS Bit 30 - : REM-SB 0x0000 = free, 0x001 = local, 0x03 = USB, 0x04 = analog 0x05 = Profibus, 0x06 = Ethernet, 0x08 = Master/Slave, 0x09 = RS232 0x10 = CANopen; 0x12 = Ethernet TCP/IP, 0x13 = Profinet IP; 0x14 = Ethernet IP; 0x15 = Ethernet TCP/IP; 0x16 = Modbus TCP/2P; 0x17 = Profinet 2P; 0x18 = GPiB; 0x19 = CAN; 0x1A = EtherCAT	2	27	x	
507	x				Actual voltage	R	uint16	2	1	0x0000 - 0xFFFF (0 - 125%)	Actual voltage (for translation see programming guide)	2	28	
508	x				Actual current	R	uint16	2	1	0x0000 - 0xFFFF (0 - 125%)	Actual current (for translation see programming guide)	2	29	
509	x				Actual power	R	uint16	2	1	0x0000 - 0xFFFF (0 - 125%)	Actual power (for translation see programming guide)	2	30	
520	x				Count of CV alarms since power up	R	uint16	2	1	0x0000 - 0xFFFF	Count	3	20	
521	x				Count of OC alarms since power up	R	uint16	2	1	0x0000 - 0xFFFF	Count	3	21	
522	x				Count of OP alarms since power up	R	uint16	2	1	0x0000 - 0xFFFF	Count	3	22	
523	x				Count of OT alarms since power up	R	uint16	2	1	0x0000 - 0xFFFF	Count	3	23	
524	x				Count of PF alarms since power up	R	uint16	2	1	0x0000 - 0xFFFF	Count	3	24	
550	x	x	x		Overvoltage protection threshold (OVP)	RW	uint16	2	1	ELR: 0x0000 - 0xE147 (0 - 110%) ELB: 0x0000 - 0xD2F1 (0 - 103%)	OVP threshold (for translation see programming guide)	3	0	
553	x	x			Overcurrent protection threshold (OCP)	RW	uint16	2	1	0x0000 - 0xE147 (0 - 110%)	OCP threshold (for translation see programming guide)	3	1	
556	x	x	x		Overpower protection threshold (OPP)	RW	uint16	2	1	0x0000 - 0xE147 (0 - 110%)	OPP threshold (for translation see programming guide)	3	6	
559	x	x			Undervoltage detection (UVD)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	UVD threshold (for translation see programming guide)	3	9	
560	x	x			Adjustable UVD notification	RW	uint16	2	1	0x0000 = nothing, 0x0001 = signal, 0x0002 = warning, 0x0003 = alarm	3	10		
561	x	x			Overvoltage detection (OVD)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	OVD threshold (for translation see programming guide)	3	11	
562	x	x			Adjustable OVD notification	RW	uint16	2	1	0x0000 = nothing, 0x0001 = signal, 0x0002 = warning, 0x0003 = alarm	3	12		
563	x	x			Undercurrent detection (UCD)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	UCD threshold (for translation see programming guide)	3	13	
564	x	x			Adjustable UCD notification	RW	uint16	2	1	0x0000 = nothing, 0x0001 = signal, 0x0002 = warning, 0x0003 = alarm	3	14		
565	x	x	x		Overcurrent detection (OCD)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	OCD threshold (for translation see programming guide)	3	15	
566	x	x			Adjustable OCD notification	RW	uint16	2	1	0x0000 = nothing, 0x0001 = signal, 0x0002 = warning, 0x0003 = alarm	3	16		
567	x	x	x		Overpower detection (OPD)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	OPD threshold (for translation see programming guide)	3	17	
568	x	x			Adjustable OPD notification	RW	uint16	2	1	0x0000 = nothing, 0x0001 = signal, 0x0002 = warning, 0x0003 = alarm	3	18		
650	x	x			Master-slave: Link mode	RW	uint16	2	1	0x0000 = Slave, 0x0001 = Master	4	0		
652	x	x			Master-slave: Link mode of Share-Bus	RW	uint16	2	1	0x0000 = Slave, 0x0001 = Master	4	2		
653	x	x			Master-slave: Enable MS	RW	uint16	2	1	0x0000 = off, 0x0001 = on	4	3		
654	x	x			Master-slave: Init MS	RW	uint16	2	1	0x0000 = off, 0x0001 = on	4	4		
655	x	x	x		Master-slave: Condition	R	uint16	2	1	0x0000 = not initialised, 0x0001 = init running, 0x0003 = set defaults, 0x0004 = setup interface, 0x0005 = assignment, 0x0006 = disrupted, 0x0007 = different mode detected, init not OK, 0x0008 = error, 0x0009 = init OK	4	5		
656	x				Master-slave: Total voltage	R	float	4	2	Floating point number IEEE754	4	6		
658	x				Master-slave: Total current	R	float	4	2	Floating point number IEEE754	4	7		
660	x				Master-slave: Total power	R	float	4	2	Floating point number IEEE754	4	8		
662	x				Master-slave: Number of initialised slaves	R	uint16	2	1	1..9	4	9		
850	x	x	x		Function generator Arbitrary: Start/stop	RW	uint16	2	1	0x0000 = Stop, 0x0001 = Start	5	0		
851	x	x	x		Function generator Arbitrary: Select U	RW	uint16	2	1	0x0000 = not assigned, 0x0001 = Assign function to U	5	1		
852	x	x	x		Function generator Arbitrary: Select I	RW	uint16	2	1	0x0000 = not assigned, 0x0001 = Assign function to current	5	2		
854	x	x	x		Function generator XY: Select U-I mode	RW	uint16	2	1	0x0000 = not assigned, 0x0001 = Assign function to U-I curve	5	4		
855	x	x	x		Function generator XY: Select I-U mode	RW	uint16	2	1	0x0000 = not assigned, 0x0001 = Assign function to I-U curve	5	5		
859	x	x	x		Function generator Arbitrary: Start sequence	RW	uint16	2	1	0x0001...0x0003	5	9		
860	x	x	x		Function generator Arbitrary: End sequence	RW	uint16	2	1	0x0001...0x0003	5	10		
861	x	x	x		Function generator Arbitrary: Sequence cycles	RW	uint16	2	1	0x0000...0x0007	5	11		
900	x			x	Function generator Arbitrary: Setup for sequence 1	RW	float	32	16	Bytes 0-3: UaIa(AC) in V Bytes 4-7: UaIa(AC) in V Bytes 8-11: IaI(UT) in Hz Bytes 12-15: IaI(UT) in Hz Bytes 16-19: Angle in degrees Bytes 20-23: UaIa(DC) in V Bytes 24-27: UaIa(DC) in V Bytes 28-31: 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...360° 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
2488	x			x	Function generator Arbitrary: Setup for sequence 99	RW	float	32	16	Bytes 0-3: UaIa(AC) in V Bytes 4-7: UaIa(AC) in V Bytes 8-11: IaI(UT) in Hz Bytes 12-15: IaI(UT) in Hz Bytes 16-19: Angle in degrees Bytes 20-23: UaIa(DC) in V Bytes 24-27: UaIa(DC) in V Bytes 28-31: 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...360° 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	98	x
6800	x			x	Function generator: XY table, block 255	RW	uint16	32	16	U mode: set voltage value I mode: set current value (16 values block)	7	0	x	
9000	x	x			Upper limit of voltage set value (U-max)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Voltage value (for translation see programming guide)	2	31	
9001	x	x	x		Lower limit of voltage set value (U-min)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Voltage value (for translation see programming guide)	2	32	
9002	x	x			Upper limit of current set value (I-max)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Current value (for translation see programming guide)	2	33	
9003	x	x			Lower limit of current set value (I-min)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Current value (for translation see programming guide)	2	34	
9004	x	x	x		Upper limit of power set value (P-max)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Power value (for translation see programming guide)	2	35	
9005	x	x	x		Upper limit of resistance set value (R-max)	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	Resistance value (for translation see programming guide)	2	37	
10007	x	x			Ethernet: TCP keep-alive	RW	uint16	2	1	0x0000 = off, 0x0001 = on	0x0000 = off, 0x0001 = on			
10008	x	x			Profinet/Modbus TCP: DHCP	RW	uint16	2	1	0x0000 = off, 0x0001 = on	0x0000 = off, 0x0001 = on			
10010	x	x			Protocol: Modbus	RW	uint16	2	1	0x0000 = off, 0x0001 = on	0x0000 = off, 0x0001 = on			
10011	x	x			Protocol: SCPI	RW	uint16	2	1	0x0000 = off, 0x0001 = on	0x0000 = off, 0x0001 = on			
10012	x	x			Warm start interface card	RW	uint16	2	1	0x0000 = trigger warm start	0x0000 = trigger warm start			
10020	x				Ethernet interface: Type	RW	uint16	2	1	0x0000 = Profibus 0x0001 = RS232 0x0002 = CANopen 0x0003 = Profinet IP 0x0004 = Ethernet IP 0x0005 = Ethernet 2P 0x0006 = Modbus TCP/2P 0x0007 = Profinet 2P 0x0008 = EtherCAT 0x0009 = CAN 0x0010 = EtherCAT 0x0011 = Signal (see register 11544) 0x0012 = Step test				
10021	x				Anybus module: Interface type	R	string	40	20	ASCII	"Profibus DPV1"			
10041	x				Anybus module: Version number	R	uint8	4	2					
10043	x				Anybus module: Serial number	RW	uint32	4	2					
10251	x	x			Profinet: User-defined "Function tag"	RW	uint16	2	1	0x0001	0x0001			
10252	x	x			Profinet: CANopen: Slave address	RW	uint16	2	1	0x0000 - 0x0005 (0 - 102%)	0x0000 = 125; CANopen: 0-127			
10253	x	x	x		Profinet/Profinet: User-definable "Location tag"	RW	string	32	16	ASCII	"Test"			
10259	x	x			Profinet/Profinet: User-definable "Location tag"	RW	string	32	16	ASCII	"Test"			
10280	x	x	x		Profinet/Profinet: User-definable installation date	RW	string	40	20	ASCII	"13.01.2012 09:59:00"			
10300	x	x			Profinet/Profinet: User-definable description	RW	string	54	27	ASCII	"www.webpage.de"			
10354	x	x			Profinet/Profinet: User-definable "Station name"	RW	string	200	100	ASCII				
10502	x	x			Ethernet/Profinet/Modbus TCP: IP address	RW	uint16	2	1	Bytes 0-3: 0..255 Bytes 4-7: 0..255 Bytes 8-11: 0..255 Bytes 12-15: 0..255 Bytes 16-19: 0..255				