

ELR 9000 3U / EL 9000 B register list for devices with KE firmware from V2.19 (standard) or V2.05 (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 (0x0B)	Description	Access	Data type	Data length in bytes	Number of registers	Data	Example	Profibus slot / Profinet subnet	Profibus/Profinet index in slot	EtherCAT SDOPDO?
0	x				Device class	R	uint(16)	2	1	Coils : Remote	20, 32, 34, 36 = ELR 9000 39 = EL 9000 B	1	0	x
1	x				Device type	R	char	40	20	ASCII				
21	x				Manufacturer	R	char	40	20	ASCII				
41	x				Manufacturer address	R	char	40	20	ASCII				
61	x				Manufacturer ZIP code	R	char	40	20	ASCII				
81	x				Manufacturer phone number	R	char	40	20	ASCII				
101	x				Manufacturer website	R	char	40	20	ASCII				
121	x				Nominal voltage	R	float	4	2	Floating point number IEEE754	80			
123	x				Nominal current	R	float	4	2	Floating point number IEEE754	170			
125	x				Nominal power	R	float	4	2	Floating point number IEEE754	3500			
127	x				Max. internal resistance	R	float	4	2	Floating point number IEEE754	12			
129	x				Min. internal resistance	R	float	4	2	Floating point number IEEE754	0.005			
131	x				Article no.	R	char	40	20	ASCII	33230401			
151	x				Serial no.	R	char	40	20	ASCII	100010002			
171	x		x		User text	RW	char	40	20	ASCII				
191	x				Firmware version (KE)	R	char	40	20	ASCII	V2.01.05.09.2012			
211	x				Firmware version (HMI)	R	char	40	20	ASCII	V2.02.13.08.2012			
231	x				Firmware version (DR)	R	char	40	20	ASCII	V1.5.6			

402	x		x		Remote mode	RW	uint(16)	2	1	Coils : Remote	0x0000 = off; 0xF000 = on	2	1	x
405	x		x		DC input	RW	uint(16)	2	1	Coils : Input	0x0000 = off; 0xF000 = on	2	4	x
407	x				Condition of DC input after power fail alarm	RW	uint(16)	2	1	Coils : Auto-On	0x0000 = off; 0xF000 = auto-on	3	30	x
408	x	x	x		Condition of DC input after powering the device	RW	uint(16)	2	1	Reg : Power-On	0x0000 = off; 0xFFFE = restore	2	6	x
409	x		x		Operation mode (UI/PI/UR)	RW	uint(16)	2	1	Coils : Operation mode	0x0000 = UIP; 0xFF00 = UIR	2	7	x
410	x				Restart of the device (warm start)	W	uint(16)	2	1	Coils : Restart	0xF000 = execute	2	8	x
411	x		x		Acknowledge alarms	W	uint(16)	2	1	Coils : Alarms	0xF000 = acknowledge	2	9	x
416	x	x			Analog interface: Reference voltage (pin VREF)	RW	uint(16)	2	1	Coils : VREF	0x0000 = 10V; 0xFF00 = 5V	2	14	x
417	x	x			Analog interface: REM-SB level	RW	uint(16)	2	1	Coils : REM-SB Level	0x0000 = normal; 0xFF00 = inverted	2	36	x
418	x		x		Analog interface: REM-SB action	RW	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	uint(16)	2	1	Coils : Controller speed	0x0000 = slow; 0xFF00 = fast	2	38	x
425	x	x			DC input after leaving remote	RW	uint(16)	2	1	Coils : Condition	0x0000 = off; 0xF000 = unchanged			
500	x	x	x		Set voltage value	RW	uint(16)	2	1	0x0000 - 0x00FE (0 - 125%)	Voltage value (for translation see programming guide)	2	23	x
501	x	x	x		Set current value	RW	uint(16)	2	1	0x0000 - 0x00FE (0 - 102%)	Current value (for translation see programming guide)	2	24	x
502	x	x			Set power value	RW	uint(16)	2	1	0x0000 - 0x00FE (0 - 102%)	Power value (for translation see programming guide)	2	25	x
503	x	x	x		Set resistance value	RW	uint(16)	2	1	variable - 0xCCCC (x = 100%)	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 : Bit 9-10: 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 0 = DC enabled; 1 = REM-SB disables power output	0x00 = free; 0x01 = local; 0x03 = USB; 0x04 = analog; 0x05 = Profibus; 0x06 = EtherCAT; 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 - 0x00FE (0 - 125%)	Actual voltage (for translation see programming guide)	2	28	x
508	x				Actual current	R	uint(16)	2	1	0x0000 - 0x00FE (0 - 125%)	Actual current (for translation see programming guide)	2	29	x
509	x				Actual power	R	uint(16)	2	1	0x0000 - 0x00FE (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	x		Overvoltage protection threshold (OVP)	RW	uint(16)	2	1	ELR: 0x0000 - 0x0E1F (0 - 110%) EL9B: 0x0000 - 0x02E1 (0 - 103%)	OVP threshold (for translation see programming guide)	3	0	x
553	x	x			Overcurrent protection threshold (OCP)	RW	uint(16)	2	1	0x0000 - 0x0147 (0 - 110%)	OCP threshold (for translation see programming guide)	3	3	x
556	x	x			Overpower protection threshold (OPP)	RW	uint(16)	2	1	0x0000 - 0x0147 (0 - 110%)	OPP threshold (for translation see programming guide)	3	6	x
559	x	x			Undervoltage detection (UVD)	RW	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	UVD threshold (for translation see programming guide)	3	9	x
560	x	x			Adjustable UVD notification	RW	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	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	OVD threshold (for translation see programming guide)	3	11	x
562	x	x			Adjustable OVD notification	RW	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	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	UCD threshold (for translation see programming guide)	3	13	x
564	x	x			Adjustable UCD notification	RW	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	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	OCD threshold (for translation see programming guide)	3	15	x
566	x	x			Adjustable OCD notification	RW	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	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	OPD threshold (for translation see programming guide)	3	17	x
568	x	x			Adjustable OPD notification	RW	uint(16)	2	1	Coils : Adjustable OPD notification	0x0000 = nothing; 0x0001 = signal; 0x0002 = warning; 0x0003 = alarm	3	18	x

650	x	x	x		Master-slave: Link mode	RW	uint(16)	2	1	Coils : Mode	0x0000 = Slave; 0xF000 = Master	4	0	x
652	x	x			Master-slave: Link mode of Share-Bus	RW	uint(16)	2	1	Coils : Mode	0x0000 = Slave; 0xF000 = Master	4	2	x
653	x	x			Master-slave: Enable MS	RW	uint(16)	2	1	Coils : MS on/off	0x0000 = off; 0xF000 = on	4	3	x
654	x	x			Master-slave: Init MS	W	uint(16)	2	1	Coils : MS start init	0xF000 = Start init	4	4	x
655	x	x	x		Master-slave: Condition	R	uint(16)	2	1	Reg : MS status	0x0000 = not initialised; 0x0001 = init running; 0x0003 = set defaults; 0x0004 = setup interface; 0x0005 = assignment; 0xFFFE = disrupted; 0xFFFF = different models detected, init not OK; 0xFFFE = error; 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	x		Function generator Arbitrary: Start/stop	RW	uint(16)	2	1	Coils : Start/Stop	0x0000 = Stop; 0xF000 = Start	5	0	x
851	x	x			Function generator Arbitrary: Select U	RW	uint(16)	2	1	Coils : U	0x0000 = not assigned; 0xF000 = Assign function to voltage	5	1	x
852	x	x			Function generator Arbitrary: Select I	RW	uint(16)	2	1	Coils : I	0x0000 = not assigned; 0xF000 = Assign function to current	5	2	x
854	x	x			Function generator XY: Select U-I mode	RW	uint(16)	2	1	Coils : U-I	0x0000 = not assigned; 0xF000 = Assign function to U-I curve	5	4	x
855	x	x			Function generator XY: Select I-U mode	RW	uint(16)	2	1	Coils : I-U	0x0000 = not assigned; 0xF000 = Assign function to I-U curve	5	5	x
856	x	x			Function generator XY: Submit curve data	RW	uint(16)	2	1	Coils : Submit for XY	0xF000 = Submit curve data	5	8	x
859	x	x	x		Function generator Arbitrary: Start sequence	RW	uint(16)	2	1	0x0001 - 0x00E3		5	9	x
860	x	x	x		Function generator Arbitrary: End sequence	RW	uint(16)	2	1	0x0001 - 0x00E3		5	10	x
861	x	x	x		Function generator Arbitrary: Sequence cycles	RW	uint(16)	2	1	0x0000 - 0x03E7	0x0000 = infinite	5	11	x

900	x			x	Function generator Arbitrary: Setup for sequence 1	RW	float	32	16	Bytes 0-3: Us/Is(AC) in V Bytes 4-7: Ue/Is(AC) in V Bytes 8-11: Is(1/T) in Hz Bytes 12-15: Is(1/T) in Hz Bytes 16-19: Angle in degrees Bytes 20-23: Us/Is(DC) in V Bytes 24-27: Ue/Is(DC) in V 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
2468	x			x	Function generator Arbitrary: Setup for sequence 99	RW	float	32	16	Bytes 0-3: Us/Is(AC) in V Bytes 4-7: Ue/Is(AC) in V Bytes 8-11: Is(1/T) in Hz Bytes 12-15: Is(1/T) in Hz Bytes 16-19: Angle in degrees Bytes 20-23: Us/Is(DC) in V Bytes 24-27: Ue/Is(DC) in V 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	98	x

2600	x			x	Function generator: X/Y table, block 0	RW	uint(16)	32	16	IU mode: set voltage value IU mode: set current value (16 values block)	value = real set value of voltage * 0.8 / Inom * 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	uint(16)	32	16	IU mode: set voltage value IU mode: set current value (16 values block)	value = real set value of voltage * 0.8 / Inom * 32768 or value = real set value of current * 0.8 / Inom * 32768	7	255	x

9000	x	x	x		Upper limit of voltage set value (U-max)	RW	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	Voltage value (for translation see programming guide)	2	31	x
9001	x	x	x		Lower limit of voltage set value (U-min)	RW	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	Voltage value (for translation see programming guide)	2	32	x
9002	x	x	x		Upper limit of current set value (I-max)	RW	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	Current value (for translation see programming guide)	2	33	x
9003	x	x	x		Lower limit of current set value (I-min)	RW	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	Current value (for translation see programming guide)	2	34	x
9004	x	x	x		Upper limit of power set value (P-max)	RW	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	Power value (for translation see programming guide)	2	35	x
9006	x	x	x		Upper limit of resistance set value (R-max)	RW	uint(16)	2	1	0x0000 - 0x00E5 (0 - 102%)	Resistance value (for translation see programming guide)	2	37	x

10005	x	x	x		Upper limit of resistance set value (R-max)	RW	uint(16)	2	1	0x0000..0x00E5 (0 - 102%)	Resistance value (for translation see programming guide)	2	37	x	
10007	x	x			Ethernet: TCP keep-alive	RW	uint(16)	2	1	Coils: Keep-alive on/off	0x0000 = off; 0xF000 = on				
10008	x	x			Profinet/Modbus TCP: DHCP	RW	uint(16)	2	1	Coils: DHCP on/off	0x0000 = off; 0xF000 = on				
10010	x	x			Protocol: Modbus	RW	uint(16)	2	1	Coils: MODBUS on/off	0x0000 = off; 0xF000 = on				
10011	x	x			Protocol: SCPI	RW	uint(16)	2	1	Coils: SCPI on/off	0x0000 = off; 0xF000 = on				
10020		x			AnyBus module: Type	R	uint(16)	2	1		0x0005 = Profibus 0x0009 = RS232 0x0010 = CANopen 0x0012 = Modbus-TCP 1P 0x0013 = Profinet 1P 0x0014 = Ethernet 1P 0x0015 = Ethernet 2P 0x0016 = Modbus-TCP 2P 0x0017 = Profinet 2P 0x0019 = CAN 0x001A = EtherCAT 0x00FF = no or unknown module plugged			x	
10021	x				AnyBus module: Interface type	R	char	40	20	ASCII	"Profibus DPV1"			x	
10041	x				AnyBus module: Version number	R	uint(8)	4	2					x	
10043	x				AnyBus module: Serial number	R(W)	uint(32)	4	2					x	
10051	x	x	x		Profibus: Ident number	RW	uint(16)	2	1		0x0001	8	0		
10252	x	x	x		Profibus/CANopen: Slave address	RW	uint(16)	2	1		Profibus: 0-125; CANopen: 0-127	8	1		
10253	x	x	x		Profibus/Profinet: User-definable "Function tag"	RW	char	32	16	ASCII	"Test"	8	2		
10286	x	x	x		Profibus/Profinet: User-definable "Location tag"	RW	char	22	11	ASCII	"Test"	8	3		
10280	x	x	x		Profibus/Profinet: User-definable installation date	RW	char	40	20	ASCII	"13.01.2012 09:59:00"	8	4		
10300	x	x	x		Profibus/Profinet: User-definable description	RW	char	54	27	ASCII	"www.website.de"	8	5		
10354	x	x	x		Profinet: User-definable "Station name"	RW	char	200	100	ASCII	"Test"	8	6		
10502	x	x	x		Ethernet/Profinet/Modbus TCP: IP address	RW	uint(8)	4	2	Bytes 0-3: 0. 255 192.168.0.2 (default)					
10504	x	x	x		Ethernet/Profinet/Modbus TCP: Subnet mask	RW	uint(8)	4	2	Bytes 0-3: 0. 255 255.255.255.0 (default)					
10506	x	x	x		Ethernet/Profinet/Modbus TCP: Gateway	RW	uint(8)	4	2	Bytes 0-3: 0. 255 192.168.0.1 (default)					
10508	x	x	x		Ethernet/Profinet/Modbus TCP: Host name	RW	char	54	27	ASCII	"Client" (default)				
10535	x	x	x		Ethernet/Profinet/Modbus TCP: Domain name	RW	char	54	27	ASCII	"Workgroup" (default)				
10562	x	x	x		Ethernet/Profinet/Modbus TCP: DNS 1	RW	uint(8)	4	2	Bytes 0-3: 0. 255 0.0.0.0 (default)					
10564	x	x	x		Ethernet/Profinet/Modbus TCP: DNS 2	RW	uint(8)	4	2	Bytes 0-3: 0. 255 0.0.0.0 (default)					
10566	x	x	x		RS232/USB: Connection timeout in milliseconds	RW	uint(16)	2	1	5..65535 Default: 5m					
10567	x	x	x		Ethernet/Profinet/Modbus TCP: MAC	R	uint(8)	6	3	Bytes 0-6: 0. 255 00:50:C2:C3:12:34 or 00:50:C2:C3:12:34					
10570	x	x	x		Ethernet/Profinet/Modbus TCP: Connection speed Ethernet port 1	RW	uint(8)	2	1		0x0000 = Auto; 0x0001 = 10Mbit half duplex; 0x0002 = 10Mbit full duplex; 0x0003 = 100Mbit half duplex; 0x0000 = Auto; 0x0001 = 10Mbit half duplex; 0x0002 = 10Mbit full duplex; 0x0003 = 100Mbit half duplex				
10571	x	x	x		Ethernet/Profinet/Modbus TCP: Connection speed Ethernet port 2	RW	uint(8)	2	1		0x0000 = Auto; 0x0001 = 10Mbit half duplex; 0x0002 = 10Mbit full duplex; 0x0003 = 100Mbit half duplex				
10572	x	x	x		Ethernet/Profinet/Modbus TCP: Port	RW	uint(16)	2	1	0..65535 5025 (default), except port 80					
10573	x	x	x		Ethernet: TCP Socket timeout. (in seconds)	RW	uint(16)	2	1	5..65535 Default: 5 s					
10700		x	x		RS232/CANopen/CAN: Baud rate	RW	uint(16)	2	1	Baud rate	CAN CANopen RS232 0x00: 10kbps 10kbps 2400 Bd 0x01: 20kbps 20kbps 4800 Bd 0x02: 50kbps 50kbps 9600 Bd 0x03: 100kbps 100kbps 19200 Bd 0x04: 125kbps 125kbps 38400 Bd 0x05: 250kbps 250kbps 57600 Bd 0x06: 500kbps 500kbps 115200 Bd 0x07: 1Mbps 800kbps - 0x08: - 1Mbps - 0x09: - Autobaud -				
10701	x	x	x		CAN: ID format	RW	uint(16)	2	1	Coils: Base/Extended	0x0000 = Base (11 Bit); 0xFF00 = Extended (29 Bit)				
10702	x	x	x		CAN: Termination	RW	uint(16)	2	1	Coils: Bus termination	0x0000 = off; 0xFF00 = on				
10704	x		x		CAN: Base ID	RW	uint(32)	4	2	0x0000...0x07FF or 0x0000...0x1FFFFFFF					
10706	x		x		CAN: Broadcast ID	RW	uint(32)	4	2	0x0000...0x07FF or 0x0000...0x1FFFFFFF					
10709	x	x	x		CAN: Data length	RW	uint(16)	2	1	Coils: Data length	0x0000 = Auto; 0xFF00 = Always 8 bytes				
10710	x	x	x		CAN: Cyclic read: Base ID	RW	uint(32)	4	2	0x0000...0x07FF or 0x0000...0x1FFFFFFF					
10712	x		x		CAN: Cyclic send: Base ID	RW	uint(32)	4	2	0x0000...0x07FF or 0x0000...0x1FFFFFFF					
10714	x	x	x		CAN: Cyclic read time (in ms): Status	RW	uint(16)	2	1	20...5000; 0 == OFF	Default: OFF				
10715	x	x	x		CAN: Cyclic read time (in ms): Set value (U, L, P, R)	RW	uint(16)	2	1	20...5000; 0 == OFF	Default: OFF				
10716	x	x	x		CAN: Cyclic read time (in ms): Limits 2 (P, R)	RW	uint(16)	2	1	20...5000; 0 == OFF	Default: OFF				
10717	x	x	x		CAN: Cyclic read time (in ms): Limits 1 (U, L)	RW	uint(16)	2	1	20...5000; 0 == OFF	Default: OFF				
10718	x	x	x		CAN: Cyclic read time (in ms): Actual values U, L, P	RW	uint(16)	2	1	20...5000; 0 == OFF	Default: OFF				
10900	x	x	x		CSWB options (active 3W)	RW	uint(16)	2	1	20...5000					