



**ELECTRUM AV**

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**DRIVERS LIST OF CJSC «ELECTRUM AV»  
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## Drivers of thyristor converters

Name	Application	Groups	Control	Supply, V	Class of supported thyristors	Output current
<a href="#">3phCRD</a> Driver of three-phase regulated amplifier	A driver of three-phase regulated amplifier 3phCRD is intended to control three-phase thyristor-diode bridge ( <b>thyristors in cathode group</b> ) and together with it allows creating three-phase regulated amplifier. The driver is intended to operate in network with peak voltage 1200 V.	A1	5...0 V	5	12	1A ( $t_{pul} \leq 1 \text{ ms}$ )  10A ( $t_{pul} \leq 100 \mu\text{s}$ )
		B1	0...5 V			
		A2	10...0 V			
		B2	0...10 V			
		A3	20...4 mA			
		B3	4...20 mA			
		A4	5...0 mA			
		B4	0...5 mA			
		A5	20...0 mA			
		B5	0...20 mA			
		B1	0...5 V			
		A2	10...0 V			
		B2	0...10 V			
		A3	20...4 mA			
		B3	4...20 mA			
		A4	5...0 mA			
B4	0...5 mA					
A5	20...0 mA					
B5	0...20 mA					
<a href="#">3phCRD-6-DIN</a> Driver of three-phase full-bridge regulated rectifier	A driver of three-phase full-bridge regulated rectifier is intended to form pulses to control thyristors ( <b>direct control</b> ) of rectifier bridge and together with it allows creating regulated rectifier. It is installed on DIN-rail.	A1	5...0 V	5	12	1A ( $t_{pul} \leq 1 \text{ ms}$ )  10A ( $t_{pul} \leq 100 \mu\text{s}$ )
		B1	0...5 V			
		A2	10...0 V			
		B2	0...10 V			
		A3	20...4 mA			
		B3	4...20 mA			
		A4	5...0 mA			
		B4	0...5 mA			
		A5	20...0 mA			
B5	0...20 mA					
<a href="#">3phCRD-6.1-DIN</a> Driver of three-phase full-bridge regulated rectifier	A driver of three-phase thyristor rectifier is intended to form pulses to control the drivers TD ( <b>logic output with voltage 5V</b> ), as a part of power bridge thyristor rectifier supplying from three-phase net with frequency 50 Hz, peak voltage up to 200V. The driver provides the thyristors' maximum current protection (version PT1 and PT2). Also the driver can be produced without maximum current protection (version PT0). It is installed on DIN-rail.	A1	5...0 V	5	12	12 mA (of logic input)
		B1	0...5 V			
		A2	10...0 V			
		B2	0...10 V			
		A3	20...4 mA			
		B3	4...20 mA			
		A4	5...0 mA			
		B4	0...5 mA			
		A5	20...0 mA			
B5	0...20 mA					

<a href="#">3phCRD-6.2-DIN</a> Driver of three-phase thyristor rectifier	A driver of three-phase thyristor rectifier is intended to form pulses to control the drivers TD ( <b>with fiber-optical receivers</b> ) as a part of power bridge three-phase thyristor rectifier supplying from three-phase net with frequency 50 Hz. The driver provides the thyristors' maximum current protection (version PT1 and PT2). Also the driver can be produced without maximum current protection (version PT0). It is installed on DIN-rail.	A1	5...0 V	5	-	-
		B1	0...5 V			
		A2	10...0 V			
		B2	0...10 V			
		A3	20...4 mA			
		B3	4...20 mA			
		A4	5...0 mA			
		B4	0...5 mA			
		A5	20...0 mA			
B5	0...20 mA					
<a href="#">3phPRD</a> Driver of three-phase power regulator	A driver of three-phase power regulator 3phPRD is intended to control the thyristor module with three pairs of back-to-back switched thyristors with optocoupler MO26D, three thyristor modules with a pair of back-to-back switched thyristors with optocoupler MO8D or six opto thyristors and together with them provides creation of three-phase power regulator. In the 3phPRD are provided current inputs to connect current sensors; thanking to this provided the protection of the modules MO8D, MO26D or of the opto thyristors against overload.	A1	5...0 V	5	12	100 mA
		B1	0...5 V			
		A2	10...0 V			
		B2	0...10 V			
		A3	20...4 mA			
		B3	4...20 mA			
		A4	5...0 mA			
		B4	0...5 mA			
		A5	20...0 mA			
B5	0...20 mA					
<a href="#">PRD FB</a> Driver of single-phase power regulator	A driver of power regulator with feedback. It is provided to operate as a part of a power regulator of active load and active-inductive one in AC circuits 220 V and 380 V with frequency 50 Hz. In the driver there is a feedback allowing providing stabilization of a parameter (voltage, squared voltage, current, squared current, power) on load.	A1	5...0 V	~220	12	0.6
		B1	0...5 V			
		A2	10...0 V			
		B2	0...10 V			
		A3	20...4 mA			
		B3	4...20 mA			
		A4	5...0 mA			
		B4	0...5 mA			
		A5	20...0 mA			
B5	0...20 mA					

### Drivers of power thyristors

Device type		U <sub>sup</sub> , V	Control type		f <sub>com</sub> , kHz	I <sub>out contin</sub> , A	U <sub>isol</sub> , kV	Note
			U <sub>contr</sub> , V	I <sub>contr</sub> , mA				
<a href="#">TD</a>	TD1-A1	15÷30	5	10	0÷20	0.8÷1	5; 10; 15	
	TD1-B1		5÷36	10				
	TD1-B1		HFBR 2522					
	TD1-B2		SFH 551/1 – 1V					
	TD2-A1		5	10				
	TD2-B1		5÷36	10				
	TD2-B1		HFBR 2522					
<a href="#">TD6</a>	TD6-H	24	4÷32	8÷12	0÷400	1	2.5 (AC)	
	TD6-O		HFBR 2522					
<a href="#">OCTD</a>	An optical converter for thyristor driver is intended to convert electrical control signal into optical control signal for applying the control signal to input of thyristors' drivers of type TD with FOCL control.							

## Drivers of thyristor commutators

Name	Application	Groups	Control voltage	Class of supported thyristors	Output current, A
<a href="#">TTMD</a> Driver with independent control three thyristors	It is intended to control thyristors. It can be used for control by two or three different thyristors as a part of half-bridges, single- and three-phase bridges operating both on the principle of pulse-phase control, and on pulse-group principle (together with the modules M1, M2, M3, M20 – M24, M26), operating on frequency 50 or 400 Hz. The driver provided a LED light for each of three channels.	TTMD	– (4...32) V	18	1 ( $t_{pul} \leq 1$ ms)  10 ( $t_{pul} \leq 100$ $\mu$ s)
<a href="#">TTMD-T3</a> Driver with independent control three thyristors	A compact three-channel thyristor driver is intended to control thyristors ( $I_{contr} \leq 200$ mA) as a part of half-bridges, single- and three-phase bridges operating both on the principle of pulse-phase control, and on pulse-group principle. It can be used together with the modules M1, M2, M3, M20 – M24, M26 operating on frequency 50 or 400 Hz.	TTMD-T3	5 ÷ 15	12	0.6

## Drivers of transistors

The drivers of power transistors with field control are shaping amplifiers of transistor gates control signals and are intended to control power transistors with field control (MOSFET or IGBT). The types, parameters and functional features of the drivers are represented in the table.

Device type	Channels quantity	$U_{sup}$ , V	$U_{contr}$ , V	$U_{isol}$ , V	$I_{out}$ pul A	$P_{out}$ , W	$f_{com}$ , kHz	$U_{ce}$ max, V	$U_{ac}$ , V	Note
<b>Drivers modules</b>										
<a href="#">DM180P-B(1)</a>	1	15	5(15)	4000	8	4	50	1700	-	
<a href="#">DM280P-B(1)</a>	2 h/b	15	5(15)	4000	8	2x4	50	1700	-	
<a href="#">2DM1180P-B</a>	2 u	15	5	4000	18	2x3	100	1700	-	
<a href="#">DM2180P-B</a>	2 h/b	15	5	4000	18	2x3	100	1700	-	
<a href="#">2DM180P-B(1)</a>	2 i	15	5(15)	4000	8	2x4	50	1700	-	
<a href="#">DM2160P-B</a>	2 u	15	5	4000	16	2x4	50	-	-	
<a href="#">DM150A</a>	1	15/- 10	5 mA	4000	5	-	25	1700	-	Analogue of M57962
<a href="#">DM1120P-A(1)</a>	1	15	5 mA	4000	12	3	25	1700	-	Analogue of VLA500-01
<b>Drivers</b>										
<a href="#">DR180P-B(1)</a>	1	15	5(15)	4000	8	4	50	1700	-	
<a href="#">DRA180P-B(1)</a>	1	15	5(15)	7500	8	4	50	3300	≤3200	Analogue of SKHI 10
<a href="#">DR280P-B(1)</a>	2 h/b	15	5(15)	4000	8	2x4	50	1700	-	Analogue of SKHI 23
<a href="#">2DR180P-B(1)</a>	2 i	15	5(15)	4000	8	2x4	50	1700	-	
<a href="#">DRB280P-B(1)</a>	2 u	15	5(15)	4000	8	2x4	200	1700	≤1200	
<a href="#">DR1300P-BF</a>	1	15	FOCL	7500	30	10	50	1700	≤1200	
<a href="#">DR2160P-B1</a>	2 h/b	15	15	4000	16	2x4	50	1700	-	Analogue of Skyper32
<a href="#">DR1480P-B1</a>	1	15	15	4000	48	10	50	1700	≤1200	Analogue of 1SD1548AI
<a href="#">DR280P-B3</a>	2 h/b	15	15	4000	8	2x4	50	1700	-	Analogue of SKHI 22A
<a href="#">DR280P-B4</a>	2 u	15	15	4000	16	2x4	50	1700	-	Analogue of Skyper32 Pro
<a href="#">DR1280P-BF</a>	1	15	FOCL	15000	28	6	50	6500	≤4400	Analogue of 1SP0635, 1SD536F2, 1SD418F2
<a href="#">DR2180P-B1</a>	2 h/b	15	5	7500	18	2x3	100	3300	-	Analogue of 2SD315AI
<a href="#">DR2180P-B2</a>	2 h/b	15	5	4000	18	2x3	100	1700	-	Analogue of 2SD300C
<a href="#">DR2180P-B3</a>	2 h/b	15	5	4000	18	2x3	100	1700	≤1200	Analogue of 2SP0320T
<a href="#">DR2180P-B4</a>	2 h/b	15	5	4000	18	2x3	100	1700	≤1200	Analogue of 2SP0115
<a href="#">DR2180P-B5</a>	2 h/b	15	5	7500	18	2x3	100	3300	≤2400	Analogue of 2SB315A
<a href="#">DR2180P-BF</a>	2 h/b	15	FOCL	7500	18	2x3	100	3300	≤2400	Analogue of 2SB315B
<a href="#">DR2180P-BF1</a>	2 h/b	15	FOCL	4000	18	2x3	100	1700	≤1200	Analogue of 2SP0320V(S)
<a href="#">DR6120P-A</a>	6 (3 h/b)	15	5	4000	12	6x3	25	1700	-	
<a href="#">DR12120P-A</a>	12 (6 h/b)	15	5	4000	12	12x3	25	1700	-	

h/b – half-bridge

i – independent control

u – universal control