

THREE PHASE DIGITAL VOLTAGE REGULATOR AND DIGITAL POWER REGULATOR TECHNICAL SPECIFICATION

High Specification Electronic Digital Voltage Regulator and Digital Power Regulator

- Compact and efficient design
- Wide range of input control signals catered for
- DVR for Phase Angle control of low inertia (including speed control)
- DPR for Burst Fire control of large inertial loads (including heating elements)
- Eliminates unreliable electro-mechanical control systems
- Fault and Over Temperature relays fitted
- Full system status LED display
- PCB selectable voltage for 400/220V or 400/690V operation
- IP43 rated enclosure



DVR/DPR SPECIFICATION

Technical Data for EnviroStart DVR and DPR Units

MODEL ¹	Continuous Current @+20°C	kW Rating Resistive loads			kW Rating Inductive loads			Energy (J)10x100uS	MOV Ratings At all Voltages		Weight kg	Fans 110V or 240V	Height/Width Depth mm
		220V ²	400V ²	690V ²	220V ²	400V ²	690V ²		Clamp V max	Clamp I max			
400-TPDVR-12	12	5	8	N/A	3.2	5.5	N/A	N/A	N/A	N/A	10	N/A	220/145/155
400-TPDVR-16	16	6.5	11	N/A	4.5	7.5	N/A	N/A	N/A	N/A	10	N/A	220/145/155
400-TPDVR-23	23	10	15	N/A	6.5	11	N/A	N/A	N/A	N/A	10	N/A	220/145/175
400-TPDVR-30	30	12	22	N/A	8.5	15	N/A	N/A	N/A	N/A	10	N/A	220/145/175
400-TPDVR-45	45	18	30	N/A	11	22	N/A	N/A	N/A	N/A	15	N/A	220/145/175
400-TPDVR-60	60	25	40	N/A	15	30	N/A	N/A	N/A	N/A	15	1x120mm	330/145/175
400-TPDVR-75	75	30	50	N/A	22	37	N/A	N/A	N/A	N/A	15	1x120mm	330/145/175
400-TPDVR-120	120	45	80	140	37	55	110	260	1050	100	15	2x120mm	430/254/280
400-TPDVR-145	145	55	100	175	45	75	132	260	1050	100	15	2x120mm	430/254/280
400-TPDVR-170	170	70	120	200	55	90	150	260	1050	100	15	2x120mm	430/254/280
400-TPDVR-205	205	80	140	250	63	110	186	320	1200	100	16	2x120mm	430/254/280
400-TPDVR-255	255	100	175	300	75	132	225	320	1200	100	16	2x120mm	430/254/280
400-TPDVR-290	290	115	200	350	90	150	260	320	1200	100	28	3x120mm	580/368/228
400-TPDVR-340	340	135	240	400	110	186	315	320	1200	100	28	3x120mm	580/368/228
400-TPDVR-410	410	165	280	500	132	225	375	320	1200	100	28	3x120mm	580/368/228
400-TPDVR-475	475	190	330	570	150	260	450	500	1210	300	28	3x120mm	580/368/228
400-TPDVR-580	580	230	400	700	186	315	550	500	1210	300	45	3x150mm	720/462/253
400-TPDVR-670	670	270	460	800	225	375	630	500	1210	300	45	3x150mm	720/462/253
400-TPDVR-800	800	320	550	950	260	450	800	500	1210	300	45	3x150mm	720/462/253
400-TPDVR-900	900	360	630	1100	315	500	950	500	1210	300	120	2x220mm	910/650/340
400-TPDVR-1100	1100	440	760	1300	375	630	1100	500	1210	300	120	2x220mm	910/650/340
400-TPDVR-1400	1400	550	970	1670	460	800	1400	500	1210	300	120	2x220mm	910/650/340
400-TPDVR-1800	1800	715	1250	2150	575	1000	1750	500	1210	300	120	2x220mm	910/650/340
400-TPDVR-2200	2200	850	1500	2600	720	1250	2150	500	1210	300			

1. For the Digital Power Regulator change "DVR" to "DPR".

2. The kW ratings given are all derived from calculations based on a standard four pole motor operating at a nominal ambient of +20°C at sea level. All units should be selected based on the current rating of the motor to which it is to be fitted.

ELECTRICAL SPECIFICATION

SUPPLY VOLTAGE	220V or 400V selected on PCB (690V Units Available) -10% - +15%
FREQUENCY	50 or 60Hz selected on PCB
SIGNAL CONDITIONING	Zero and span control setting by potentiometer

CONTROL SPECIFICATION

RAMP UP TIME	0 - 10s by (Potentiometer set)
MINIMUM VOLTAGE SETTING	1 to 100% (Potentiometer set)
FAULT DETECTION	Thyristor fault, Logic fault, Phase failure
LED INDICATIONS	Run, Incorrect Phase, Rotation, System Fault
POWER SWITCHING	Fully base-isolated thyristor Paks or independent Puks
CONTROL CIRCUITRY	High frequency MPU with full internal watch keeping and protocol management systems
CONTROL BOARD	Multi layer PCB with high voltage tracking and optional high RH environmental protection
CONTROL SUPPLY	Derived from three phase input or external supply, (user selectable)
CONTROL VOLTAGE	Derived internally
INPUT SIGNAL	5K0 potentiometer or; Any voltage up to 10V DC, live or non-live zero. Any two currents up to 20mA, DC live or non-live zero. Any two voltages up to 10V DC, live or non-live zero. Any two currents up to 20mA, DC live or non-live zero. (priority is given to largest value signal)
RELAY OUTPUT	Fault detection (including loss of control supply). Over temperature of load or heatsink (selectable)
RELAY CONTACT RATING	250V, AC maximum 2.2kVA
MECHANICAL PROTECTION	IP43, NEMA 1 sheet metal enclosure or High Impact ABS cover on Heatsink Backplane (Dependant on kW rating)

ENVIRONMENTAL SPECIFICATION

OPERATING TEMP	0°C + 40°C @ < 95%RH. (De-rate 20%/10°C above +40°C)
STORAGE TEMP	-10°C - +60°C
ALTITUDE	Nominal 2000m above sea level De-rate Amps by 1%/100m above 2000m
EU DIRECTIVES	Meets all EMC and Low Voltage Directives (including G5/4)
UL LISTING	Listed for US and Canadian use File E192379 (45 to 800kW units)

COOLING

COOLING	Naturally cooled isolated heatsink up to 22kW. Fan cooled for 30kW and above (240/110V supply required for fans)
THERMAL CUT OUT	Automatically cuts out in event of over-temperature on heatsink

All details relate to units operating with a 400V synchronous three phase sinusoidal supply.



ems
European Ltd

Unit 1, 67 Nairn Road, Bloxwich, Walsall WS3 3XB. England
Tel: +44 (0)1922 491063 Fax: +44 (0)1922 491064

E-mail: info@EnviroStart.com
www.EnviroStart.com

Manufactured & Distributed Worldwide by EMS European Ltd.