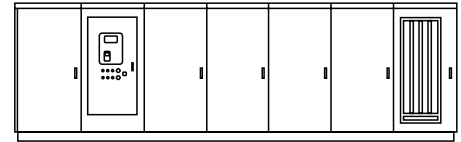


XMV660 Outdoor

**Prepared to operate under the most demanding environments.
No need for an electrical room.
No ambient noise inside facility.
Innovative Cooling System**



XMV660 Outdoor



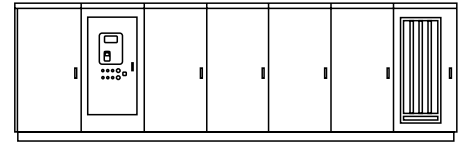
INPUT	Input voltage (kV) ^[1]	2.3 kV to 13.8 kV (±10%)
	Frequency	50/60 Hz (±10%)
	Power factor	>0.95 (over 20% load)
	THDi (%) current ^[2]	<5%
	Power transformer	Phase-shift transformer, dry type (Copper or aluminum)
	Voltage dip	Exceeds IEC/EN 61000-4-34
	Overvoltage protection	Surge Arresters
OUTPUT	Technology	Multi-level, pulse-width modulation, low voltage power modules connected in series
	Pulses / power modules in series	18p/3, 24p/4, 30p/5, 36p/6, 54p/9
	Power modules (A) / (V)	120 A, 200 A, 300 A, 400 A / 600 V-700 V
	Current harmonic distortion (THDi)	<5%
	Harmonic voltage factor (HVF)	<0.019 (No motor derating required)
	Efficiency	≥96% (including transformer) @Pn
	Triplex operation	Redundant Power System (RPS)
	Output voltage boosting	Transformer Tap Adjustment
ENVIRONMENTAL CONDITIONS	Degree of protection	(IEC60529) IP55, NEMA3R
	Operation temperature	-20 °C to +50 °C
	Storage temperature	-25 °C to +55 °C
	Humidity	<95%, non condensing
	Altitude	<1000 m; >1000 m power derating 1%/100 m. Max. 3000 m Optional reinforced isolation for up to 4500 m.
	Cooling	Forced air cooling, Self cleaning filters
	Varnished electronics	Class 3C3
CONTROL	Control mode	Local control (Display and push-buttons) Remote control (I/O and communications), Web display (wifi)
	Control method	V/Hz VECTOR CONTROL Open Loop: PMC speed / torque control, AVC: speed / torque control Close Loop (Encoder): PMC speed / torque control, AVC: speed / torque control
	Carrier frequency	1 kHz
	Control power supply	Redundant 2x230 Vac II P+N (1 kVA), UPS integrated
	Other characteristics	Voltage/Power ride through, quick setting and commissioning, master-slave synchronization, skip critical frequencies, delay-off IGBT, motor pre-magnetization, flux reduction at low load (energy saver), electric DC brake, multi-reference and speed ramp, Power PLC programming, Other, please consult Power Electronics.
	Digital inputs	5 programmable, Active high (24 Vdc), Isolated power supply 5 pre-configured (Start/Stop ; Reset, control mode, reference) 1 PTC input
USER INTERCONNECTION ^[1]	Analog inputs	3 programmable differential inputs. 0–20 mA, 4–20 mA, 0–10 Vdc and ±10 Vdc. (Optically isolated)
	Digital outputs	2 programmable changeover relays (250 Vac, 8 A or 30 Vdc, 8 A) 3 programmables NO contacts (250 Vac, 8 A or 30 Vdc, 8 A) 3 pre-configured contacts (Start/Stop, Warning, Failure)
	Analog outputs	3 isolated programmable outputs: 0–20 mA, 4–20 mA, 0–10 Vdc and ±10 Vdc
	Encoder (optional)	2 differential encoders input (process and vector control). Input signal from 5 to 24 Vdc

NOTES

[1] Other configurations, please consult Power Electronics.

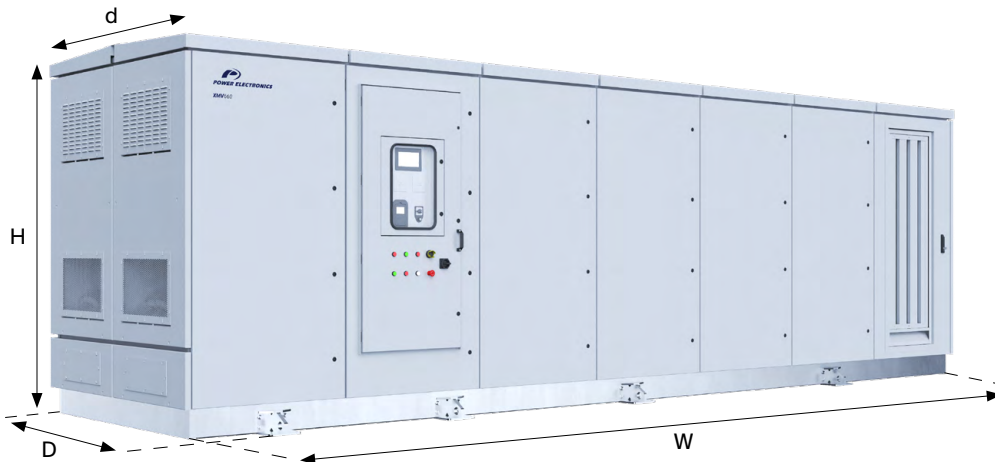
[2] Harmonics are below the limits defined in IEEE519 for all I_{sc}/I_L .

XMV660 Outdoor



COMMUNICATIONS	Standard Hardware	USB, RS232, RS485, Ethernet
	Optional Hardware	Fiber optics, 9 Pin D-SUB, CAN
	Standard Protocol	Modbus-RTU, Modbus TCP
	Optional Protocol	Profibus-DP, Devicenet, CANopen, Ethernet IP and Profinet
PROTECTIONS	Motor protections	Rotor locked, torque limit, Motor overload (thermal model), Output current limit, Phase current imbalance, Ground fault current, Phase voltage imbalance, Motor over-temperature (PTC), Speed limit, excessive starting and stopping time.
	Drive protections	Input phase loss, Low input voltage, High input voltage, maximum number of faulty modules, High input frequency, Low input frequency, drive overload, drive over-temperature, Analog input signal loss (speed reference loss), communication loss (time-out), Power supply fault, Emergency stop
	Power modules protections	Overcurrent (fuses), high DC bus voltage, Low DC bus voltage, DC bus voltage instability, low input voltage, fiber optics communication lost, communication time overpassed (time-out), control voltage lost, gate drive fault, power module overtemperature.
REGULATIONS	Electromagnetic compatibility	Directive EMC 2004/108/EC, IEC/EN 61800-3, IEEE 519-1992
	VSD design and construction	IEC/EN 61800-4 General requirements IEC/EN 61800-5-1 Safety IEC/EN 60146-1-1 Semiconductor converters
	MV transformer	IEC/EN 60076 -1, -11, IEC/EN 60146-1-3, IEC/EN 61378-1

DIMENSIONS



Voltage	Rated Current		Width W (mm)	Depth D (mm)	Depth d (mm)	Height H (mm)
	40 °C Normal duty	50 °C Heavy duty				
4.16 kV	<140 A	<120 A	5064	2122	1938	2331
	141 A - 240 A	121 A - 200 A	5910	2122	1938	2331
	241 A - 360 A	201 A - 300 A	7382	2122	1938	2331