

Eaton Power Xpert XGIS



		1250A	2000/2500A
1	ENVIRONMENTAL CONDITIONS		
1.1	Maximum operating ambient temperature	40 deg C (104 deg F)	40 deg C (104 deg F)
1.2	Maximum operating ambient temperature (average over 24 hours)	35 deg C (95 deg F)	35 deg C (95 deg F)
1.3	Minimum operating ambient temperature	-5 deg C (23 deg F)	-5 deg C (23 deg F)
1.4	Relative humidity (for a period over 24 hours)	< 95%	< 95%
1.5	Place of installation	Indoor / Underground	Indoor / Underground
1.6	Standard altitude	<1000m	<1000m
1.7	Extended altitude	<4000m	<4000m
2	GENERAL AND ENCLOSURE		
2.1	Certification - UL (Omaha only)	E503728	E503728
2.2	Testing authority, switchgear	CESI	CESI
2.3	Testing certificate (family) switchgear	(Pending)	(Pending)
2.4	Switchgear type	Gas Insulated	Gas Insulated
2.5	Insulated medium (inside of tank, consist of breaker & 3-position switch)	SF6	SF6
2.6	Construction type	Metal Enclosed	Metal Enclosed
2.7	Cable Connection compartment accessibility	Lower/Front	Lower/Front
2.8	Primary cable entry	Bottom	Bottom
2.9	External Enclosure Degree of Protection	IP2X (meets NEMA 1), IP4X optional	IP2X (meets NEMA 1), IP4X optional
2.10	Primary live parts (tank) Degree of Protection	IP65	IP65
2.11	Protection between compartments with front doors open	2X	2X
2.12	Rated operational voltage at 50 Hz	36kV	36kV
2.13	Rated operational voltage at 60 Hz	38kV	38kV
2.14	Long-term voltage tolerance	+/-5%	+/-5%
2.15	Power frequency withstand voltage (1 min)	80kV	80kV
2.16	Impulse withstand voltage	170kV	170kV
2.17	Panel (enclosure) width	600mm (23.6 in.)	800mm (31.5 in.)
2.18	Panel (enclosure) Depth	1800mm (70.9 in.)	1800mm (70.9 in.)
2.19	Panel (enclosure) Height	2700mm (106.3 in.)	2700mm (106.3 in.)
2.20	Basic Panel (enclosure) weight Main/Feeder (5A,2B)	1080kg (2381 lbs)	1450kg (3197 lbs)
2.21	Basic Panel (enclosure) weight Sectionalizer/Tie breaker (3A,3B)	1020kg (2209 lbs)	1310kg (2888 lbs)
2.22	Basic Panel (enclosure) weight Bus coupler/Riser (4A,4B)	720kg (1587 lbs)	960kg (2116 lbs)
2.23	Basic Panel (enclosure) weight Disconnecter (6A,6B)	980kg (2161 lbs)	1067kg (2352 lbs)
2.24	Weight of end of lineup parts (end skins & covers) for far left or right units	201kg (443 lbs)	201kg (443 lbs)
2.25	Gauge of sheet metal for structure/panel (from Omaha)	11ga	11ga
2.26	Thickness of sheet metal for structure/panel (from Ningbo)	3mm	3mm
2.27	Internal arc classification IAC, free standing	AFLR	AFLR
2.28	Internal arc classification IAC, wall mounted	AFL	AFL
2.29	Internal arc rating	31.5kA - 1 sec	31.5kA - 1 sec
2.30	Maximum pressure at arc-duct	1.05bar (gauge)	1.05bar (gauge)
2.31	Volume of SF6 tank in Main/Feeder (5A,2B)	625L	710L
2.32	Volume of SF6 tank in Sectionalizer/Tie breaker (3A,3B)	530L	840L
2.33	Volume of SF6 tank in Bus coupler/Riser (4A,4B)	530L	840L
2.34	Weight of SF6 in Main/Feeder (5A,2B)	5kg	5.6kg
2.35	Weight of SF6 in Sectionalizer/Tie breaker (3A,3B)	4.2kg	6.7kg
2.36	Weight of SF6 in Bus coupler/Riser (4A,4B)	4.2kg	6.7kg
2.37	Gas Monitoring system	Gas Density Gauge	Gas Density Gauge
2.38	Pressure, nominal filled, absolute	0.130 Mpa/18.85psi	0.130 Mpa/18.85psi
2.39	Pressure, nominal filled, gauge	0.030 Mpa/4.35psi	0.030 Mpa/4.35psi
2.40	Pressure, minimum functional, absolute	0.120 Mpa/17.40psi	0.120 Mpa/17.40psi
2.41	Pressure, minimum functional, gauge	0.020 Mpa/2.90psi	0.020 Mpa/2.90psi
2.42	Gas tank burst disk rupture pressure, gauge	0.120 Mpa/17.40psi	0.120 Mpa/17.40psi
2.43	Gas leakage rate / year	<0.1%	<0.1%
2.44	Standard color (top/majority)	Blue RAL 5015 / Gray RAL 7053	Blue RAL 5015 / Gray RAL 7053
2.45	Subdivision of the panel (compartments):		
2.46	Bus bar compartment	Yes	Yes
2.47	Cable compartment	Yes	Yes
2.48	VCB compartment	Yes	Yes
2.49	Top mounted VT compartment	Yes	Yes
2.50	LV compartment	Yes	Yes
2.51	Power Cables:		
2.52	Number of cables / conductor cross sectional area	3x 95-630mm ² (Surge arrester and cable side VT takes up 1 cable connection)	6x 95-630mm ² (Surge arrester and cable side VT takes up 1 cable connection)
2.53	Number of cable bushings per phase	1	2

2.54	Maximum amperage rating for each cable bushing	1250A	1250A (2500A total)
2.55	Maximum amperage rating for each cable bolted tee connector	1250A	1250A
2.56	Temperature rating of bolted tee connector	105 deg C	105 deg C
2.57	Cable bushing height from the floor	754mm (29.7")	674mm (26.5") - Lower bushing
2.58	Weight of cable tee connectors (each)	5kg (12 lbs)	5kg (12 lbs)
2.59	Weight of surge arrestors (each)	7kg (15 lbs)	7kg (15 lbs)
2.60	Cable access:		
2.61	- Low voltage	Top and Bottom front	Top and Bottom front
2.62	- High voltage	Bottom front	Bottom front
2.63	- Multicore cables	N/A	N/A
2.64	- Single core cables	Yes	Yes
2.65	Cable Mounting arrangement:		
2.66	- Floor standing	Yes	Yes
2.67	- Separate plinth (50mm)	N/A	N/A
2.68	Anti-condensation heaters / locations	Cable compartment	Cable compartment
2.69	Wattage of heater elements	125 Watts output each at 120VAC (Rated for 500 watts at 240VAC)	125 Watts output each at 120VAC (Rated for 500 watts at 240VAC)
2.70	Power Supply Voltage :		
2.71	VAC	110, 120, 220	110, 120, 220
2.72	VDC	110,125, 220	110,125, 220
2.73	Number of aux contacts for breaker	5 x N.O., 5 x N.C.	5 x N.O., 5 x N.C.
2.74	Number of aux contacts for switch	6 x N.O.	6 x N.O.
2.75	MAIN BUSBAR		
2.76	Busbar system	Solid insulation with outer grounding (earthing) layer	Solid insulation with outer grounding (earthing) layer
2.77	Busbar arrangement	Single only, modular	Single only, modular
2.78	Insulation medium	Solid insulation (silicone rubber)	Solid insulation (silicone rubber)
2.79	Conductor material	Copper	Copper
2.80	Plating on contact surface	Tin	Tin
2.81	Conductor Size (1250A, 2000/2500A)	32mm, 50mm (diameter)	32mm, 50mm (diameter)
2.82	Conductor crosssectional area	804mm ²	1964mm ²
2.83	Weight (3 phases 600mm/ 3 phases 800mm)	95kg (210 lbs)	106kg (234 lbs)
2.84	Continous current	1250A, 2500A	2500A
2.85	Rated bus temperature rise	60C above 40C ambient	60C above 40C ambient
2.86	Short time withstand current (rms)	31.5kA	31.5kA
2.87	Duration of short circuit	3 seconds	3 seconds
2.88	Momentary (short time) withstand current (peak)	82kA	82kA
2.89	Voltage	36/38kV	36/38kV
2.90	Power frequency withsand voltage (rms)	80kV	80kV
2.91	Lightning impulse withstand voltage (peak)	170kV	170kV
2.92	Lightning impulse withstand voltage, across the isolating distance (peak)	195kV	195kV
2.93	Frequency	50/60Hz	50/60Hz
2.94	EARTH/GROUND BUSBAR:		
2.95	Conductor material	Copper	Copper
2.96	Conductor finish	Bare, Silver or Tin plated	Bare, Silver or Tin plated
2.97	Conductor Size	40 x 10 mm	40 x 10 mm
3	CIRCUIT BREAKER:		
3.1	Testing authority, breaker	KEMA	KEMA
3.2	Testing certificate, breaker	(Pending)	(Pending)
3.3	Circuit Breaker mounting type	Fixed/non-removable	Fixed/non-removable
3.4	Breaking medium	Vacuum	Vacuum
3.5	Voltage	36/38kV	36/38kV
3.6	Power frequency withsand voltage (rms)	80kV	80kV
3.7	Lightning impulse withstand voltage (peak)	170kV	170kV
3.8	Frequency	50/60Hz	50/60Hz
3.9	Continous current	1250A	2000A, 2500A
3.10	Short time withstand current (rms)	31.5kA	31.5kA
3.11	Duration of short circuit	3 seconds	3 seconds
3.12	Momentary (short time) withstand current (peak)	82kA	82kA
3.13	Breaking capacity (asymmetrical)	50.4 kA	50.4 kA
3.14	Breaking capacity (symmetrical)	31.5kA	31.5kA
3.15	Maximum number of breaking short-circuit current	30 times	30 times
3.16	Rated asymmetrical making current	80kA @ 50 Hz, 82kA @ 60Hz	80kA @ 50 Hz, 82kA @ 60Hz
3.17	% DC component (According to IEC60909)	33%	33%
3.18	First zero crossing (ms)	<3 ms	<3 ms
3.19	Operating sequence	O - 0,3s - CO - 15s - CO	O - 0,3s - CO - 15s - CO
3.20	Capacitive current switching	N/A	N/A
3.21	Cable charging breaking current	50 A	50 A

3.22	Cable charging class	C1	C2
3.23	Mechanical operations	10,000 times	2,000 times
3.24	Mechanical endurance class	M2	M1
3.25	Electrical endurance	E2	E2
3.26	Power closing device	Trip free (electrical)	Trip free (electrical)
3.27	Motor operated	Yes	Yes
3.28	Manual operation	Yes	Yes
3.29	Mechanically-coupled indicator to show the switch position in closed, open and grounded positions	Yes	Yes
3.30	Closing Coil	Yes	Yes
3.31	Numbers of trip coils	2*	2*
3.32	Numbers of auxiliary contacts for tripping	5 x N.O., 5 x N.C.	5 x N.O., 5 x N.C.
3.33	Charging motor Power	90 W	90 W
3.34	Motor Locked rotor current	3.6A at 125VDC, 3.05A at 106VDC, 3.95A at 137.5VDC	3.6A at 125VDC, 3.05A at 106VDC, 3.95A at 137.5VDC
3.35	Motor running current	0.72A at 125VDC, 0.61A at 106VDC, 0.79A at 137.5VDC	0.72A at 125VDC, 0.61A at 106VDC, 0.79A at 137.5VDC
3.36	Charging motor voltage range	106-137 VDC	106-137 VDC
3.37	Time to recharge closing mechanism after CO operation	<15 sec at minimum voltage	<15 sec at minimum voltage
3.38	Trip coil- (Inrush)	242 W	242 W
3.39	Close coil- (Inrush)	242 W	242 W
3.40	Under voltage coil-(Inrush)	108 W	108 W
3.41	Closing Time	25-45ms	25-47ms
3.42	Tripping Delay Time	< 8ms	< 8ms
3.43	Opening Time	30-50ms	30-50ms
3.44	Contact Parting Time	<58ms	<58ms
3.45	Arcing time	<12ms	<12ms
3.46	Breaking (interrupting) time	35-62ms (5 cycle rated)	35-62ms (5 cycle rated)
3.47	Total clearing time	<70ms	<70ms
	*dual trip coils available if under-voltage trip coil is not required		
4	THREE POSITION DISCONNECT SWITCH:		
4.1	Voltage	36/38kV	36/38kV
4.2	Power frequency withstand voltage	80kV	80kV
4.3	Power frequency withstand voltage, across the isolating distance (rms)	88kV	88kV
4.4	Lightning impulse withstand voltage	170kV	170kV
4.5	Lightning Impulse withstand voltage, across the isolating distance (rms)	195kV	195kV
4.6	Frequency	50/60Hz	50/60Hz
4.7	Continuous current	1250A	2500A
4.8	Short time withstand current	31.5kA	31.5kA
4.9	Duration of short circuit	3 seconds	3 seconds
4.10	Mechanical operations	2,000	2,000
4.11	Mechanical endurance class	M1	M1
4.12	Electrical endurance of earthing switch	E2	E2
4.13	Motor operated	Yes	Yes
4.14	Manual operation	Yes	Yes
4.15	Mechanically-coupled indicator to show the switch position in closed, open and grounded positions	Yes (with LV door open or with viewing window)	Yes (with LV door open or with viewing window)
4.16	Motor power	70W	70W
4.17	Motor voltage	110/125 VDC	110/125 VDC
4.18	Controller power consumption	5W	5W
4.19	Derated nominal current		
4.20	<input type="checkbox"/> Ambient temperature 40 °C	1250A	2000A/2500A
4.21	<input type="checkbox"/> Ambient temperature 45 °C	1188A	1900A/2375A
4.22	<input type="checkbox"/> Ambient temperature 50 °C	1125A	1800A/2250A
4.23	<input type="checkbox"/> Ambient temperature 55 °C	1063A	1700A/2125A
5	Current Transformers		
5.1	Type	Individual Window	Individual Window
5.2	Casing	Case-resin insulated	Case-resin insulated
5.3	Accuracy (IEC)	Up to 0.5FS10 & 10P30**	Up to 0.5FS10 & 10P30**
5.4	Burden (IEC)	Up to 30VA**	Up to 30VA**
5.5	Cable side CT's:		
5.6	Total depth allowable on cable bushings for IEC rated CT's	330mm	305mm
5.7	Weight of 65mm deep IEC rated CT	6kg (14 lbs)	10kg (21 lbs)
5.8	Weight of 100mm deep IEC rated CT	10kg (22 lbs)	15kg (33 lbs)
5.9	Weight of 150mm deep IEC rated CT	15kg (33 lbs)	22kg (50 lbs)
5.10	Total depth allowable on cable bushings for ANSI rated CT's	13"	12"
5.11	Weight of 3.75" deep ANSI rated CT	est: 20lb	
5.12	Weight of 6.5" deep ANSI rated CT	est: 30lb	

5.13	Weight of 4" deep ANSI rated CT		est: 40lb
5.14	Weight of 6" deep ANSI rated CT		est: 60lb
5.15	Bus side CT's:		
5.16	Total depth allowable on cable bushings for IEC rated CT's	145mm (also applies between 600mm and 800mm structures)	205mm
5.17	Weight of 65mm deep IEC rated CT	5kg (11 lbs)	5kg (11 lbs)
5.18	Weight of 100mm deep IEC rated CT	8kg (17 lbs)	8kg (17 lbs)
5.19	Weight of 150mm deep IEC rated CT	12kg (26 lbs)	12kg (26 lbs)
5.20	Weight of 4" deep ANSI rated CT	9kg (20 lbs)	9kg (20 lbs)
	**Pending on ratio and other values		
6	Voltage Transformers		
6.1	Type	Plug-in	Plug-in
6.2	Casing	Epoxy with metal casing	Epoxy with metal casing
6.3	Power Frequency Withstand (IEC/ANSI at 36/38kV)	70/80kV	70/80kV
6.4	BIL Rating (at 36/38kV)	170kV	170kV
6.5	Weight of top mounted fused VT and lifting brackets	74kg (164 lbs)	74kg (164 lbs)
6.6	Weight of top mounted unfused VT and lifting brackets	60kg (132 lbs)	60kg (132 lbs)
6.7	Weight of bottom mounted unfused VT and brackets	55kg (121 lbs)	55kg (121 lbs)
6.8	Weight of remote mounted fused VT	50kg (110 lbs)	50kg (110 lbs)