

VARIABLE SPEED DRIVE SC-J602A to D

GENERAL				INPUT DATA			
1				65			
2	MX Asset / Tag Number/s	SC-J602A, B, C, & D		66	Rated Power	*	kW
3	Service			67	Voltage	415	V
4	Serial Number/s	Note 3		68	Frequency	50 ± 6%	Hz
5	P&ID Reference No.	F-05-60010		69	Rectifier Technology	IGBT *	
6	Location			70	Rectifier Configuration (6, 12-pulse, AFE)	AFE	
7	External power factor correction	NOT REQUIRED		71	Regenerative (Yes / No)	Yes	
8	External harmonic correction	NOT REQUIRED		72	Power Factor including harmonic distortion	Adjustable from 0.90 lag to 0.90 lead *	
9	External filtering	NOT REQUIRED		73	EMC Category as per IEC 61800-3	First Environment, C2 (Domestic)	
10				74	Harmonic Filter Required (Yes/No)	Yes *	
11				75	Harmonic Filter Type	LCL *	
12				76	Harmonic Filter Location	INTERNAL	
13				77	Current THD	<5 *	%
14				78	Torque-Speed Operation	4-Quadrant	
15	ENVIRONMENTAL DATA			79	Momentary Power Loss ride through	2 *	s
16	Location (Indoors / Outdoors)	Indoor		80	Power Cable Size	To be determined	mm²
17	Airconditioning (Yes/No)	YES		81	Power Cable Type	To be determined	
18	Average Ambient Temperature	20-25	°C	82	Power Cable Length (Approximate)	10-15	m
19	Minimum Ambient Temperature	0	°C	83	Upstream protection	MCCB, 630A (adjustable), with 110V DC	
20	Maximum Ambient Temperature	45	°C	84		shunt trip for tripping from VSD or	
21	Altitude above sea level	<1000	m	85		Protection Relay (RTD and Motor E/F)	
22	Relative Humidity (Non-condensing)	<95	%	86			
23				87			
24				88			
25				89			
26				90			
27				91			
28				92			
29				93			
30	LOAD (MOTOR) DATA			94	OUTPUT DATA		
31	Load Description	Pump Motor, 7-stage centrifugal		95	Rated Voltage	400-415 (Adjustable)	V
32	Motor Type	Induction / Squirrel Cage		96	Rated Power	315	kW
33	Motor Rating	315	kW	97	Rated Current	*	A
34	Poles	2		98			
35	Rated Speed	2950	RPM	99	Overload Capacity (Continuous, or *)		
36	RTDs (Yes / No)	YES - Not connected to VSD		100	Continuous @ 20°C	120 *	%
37	Type of RTDs	PT-100 - Not connected to VSD		101	5 minutes @ 40°C	120 *	%
38	Number of Winding RTDs	6 - Not connected to VSD		102	EMC Category as per IEC 61800-3	First Environment, C2 (Domestic)	
39	Number of Bearing RTDs	2 - Not connected to VSD		103	Output dV/dt	≤500 *	V/μs
40	Thermistors (Yes / No)	Yes		104	Output common mode filtering	INTERNAL	
41	Type of Thermistors	PTC		105	Power Cable Size	2 x 150-180 (TBC)	mm²
42	Number of Winding Thermistors	3		106	Power Cable Type	2 x 3C+3E Cu, XLPE, Screened, SWA *	
43	Number of Bearing Thermistors	0		107	Power Cable Length (Approximate)	20-50	m
44	Vibration Detector (Yes / No)	No		108		Length dependent on pump	
45	Number of Vibration Detectors	0		109	Downstream Protection	Space for 1000/1A toroidal earth leakage	
46	Hazardous Area Classification	ZONE 2 GROUP IIA TEMP T2		110		current transformer required in output	
47	VSD Manufacturer Load / Motor statement	Manufacturer must state that the VSD		111		connection compartment for motor	
48		will not cause adverse effects on the		112		sensitive earth fault *	
49		motor or pump (eg EDM or other). *		113			
50				114			
51				115			
52				116			
53				117			
54	PERFORMANCE DATA			118	MOTOR PROTECTIONS		
55	Minimum Speed	20	Hz	119	Locked Rotor	Yes *	
56	Maximum Speed	50	Hz	120	Thermal Overload	Yes *	
57	Efficiency at 100% load	≥97 *	%	121	Output Current Limit	Yes *	
58	Efficiency at 50% load	≥97 *	%	122	Phase Current Imbalance	Yes *	
59	MTBF	*	hours	123	Phase Voltage Imbalance	Yes *	
60	MTTR	*	hours	124	Over-temperature	Yes *	
61	Speed Regulation	±1	%	125	Speed Limit	Yes *	
62				126	Torque Limit	Yes *	
63				127			
64				128			

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1 DRIVE PROTECTIONS					65 ENCLOSURE DATA				
2	Overload	Yes *			66	Number of enclosures per VSD	ONE		
3	Input Phase Loss	Yes *			67	Degree of Protection	IP54 *		
4	Input Under Voltage with Time Delay	Yes *			68	Anti-condensation Heater & Thermostat	Yes		
5	Input Over Voltage with Time Delay	Yes *			69	Voltage / Phase	230 / 1		V / Ph
6	DC Bus Voltage Limit	Yes *			70	Power	*		W
7	DC Bus Under Voltage	Yes *			71	Dimensions			
8	High Input Frequency	Yes *			72	Height (total including any plinth)	2400 *	MAX	mm
9	Low Input Frequency	Yes *			73	Width	1275 *	MAX	mm
10	Over-temperature	Yes *			74	Depth (note 10)	750 *	MAX	mm
11	Power Supply Fault	Yes *			75	Door Width (note 10)	450 *	MAX	mm
12	Earth Fault	Yes *			76	Maximum sound pressure level @ 1m	≤75 *		dBA
13	Software / Hardware Fault	Yes *			77	Cable Entry			
14	Analogue Signal Loss	Yes *			78	Input	TOP		
15					79	Output	TOP		
16					80	Cooling Medium (Air/Water/Liquid)	Air		
17					81	Access	Front ONLY, back to wall, drives side		
18					82		by side		
19 COMMUNICATIONS					83 PROCUREMENT DETAILS				
20	Modbus TCP	Yes			84	Manufacturer	TBA		
21	Ethernet	Yes *			85	Model	TBA		
22	Communications External Power Supply	24		Vdc	86	Manufacturer's order reference	Note 3		
23					87	Supplier	Note 3		
24					88	Suppliers order reference	Note 3		
25					89	Methanex P/O number	Note 3		
26 CONTROL - INPUTS / OUTPUTS					90 DOCUMENTATION TO BE SUPPLIED				
27	Digital Inputs - Programmable	6 *			91				
28	Digital Inputs - PTC	3 *			92	Detailed general arrangement drawing	Note 4, 11		
29	Digital Outputs - Programmable	3 *			93	Schematic / connection diagram	Note 4, 11		
30	Analogue Inputs - Programmable/Isolated	2 *			94	Copy of type test certificates	Note 4		
31	Analogue Outputs-Programmable/Isolated	2 *			95	IOM Manual incl full parts list	Note 4, 5		
32					96	Recommended spare parts list	Note 4, 6		
33					97	Routine test certificates	Note 12		
34					98				
35					99				
36					100				
37 CONTROL & DISPLAY INTERFACE					101 APPLICABLE STANDARDS				
38					102				
39	Visualisation LEDs (On/Run/Fault)	Yes *			103	IEC 61800 Adjustable Speed Electrical Power Drive Systems (Note 7)			
40	Alphanumeric Display with Keypad	Yes *			104	IEC 60529 Degrees of Protection Provided by Enclosures (IP Code)			
41	Display Information				105	IEEE 519 Recommended Practice and Requirements for Harmonic Control			
42	Average and 3-Phase Input Voltage	Yes *			106	in Electric Power Systems			
43	Average and 3-Phase Input Current	Yes *			107	IEC 60146-1-1 Semiconductor converters – General requirements and line			
44	3-phase Input Frequency	Yes *			108	commutated converters – Part 1-1: Specification of basic requirements			
45	Average and 3-Phase Motor Current	Yes *			109				
46	Average and 3-Phase Motor Voltage	Yes *			110				
47	3-phase Output Frequency	Yes *			111	NOTES			
48	DC Bus Voltage	Yes *			112	1. TBA - To Be Advised			
49	Motor Speed	Yes *			113	2. TBC - To be Confirmed			
50	Motor Torque	Yes *			114	3. To be as-built			
51	Motor Power	Yes *			115	4. To be submitted with tender			
52	Motor Power Factor	Yes *			116	5. IOM - Installation, Operations and Maintenance			
53	Drive Status	Yes *			117	6. Include commissioning spares			
54	Digital Input Status	Yes *			118	7. All applicable parts			
55	Analogue Inputs Value	Yes *			119	8. AFE - Active Front End			
56	Analogue Outputs Value	Yes *			120	9. IGBT - Insulated Gate Bipolar Transistor			
57	Motor Overload Status	Yes *			121	10. Sum of depth plus door opening to be as low as possible definitely not exceeding the sum of these. Lift off panels are ok where access is not required live or in service.			
58	Drive Temperature	Yes *			122				
59	Fault History	Yes *			123				
60					124	11. To submitted 4 weeks upon receipt of order.			
61					125	12. To be submitted with shipment.			
62					126				
63					127				
64					128				