 TORUS		· Owner PANEL SCHEDULES			Document No.	ELE-LST-002	
					Revision / Date	A · September 29, 2026	
					Issue purpose	Issued for Review	
ELECTRICAL · PANEL SCHEDULES							
Rev.	Date	Revision description		Prepared	Reviewed	Approved	
A	2026-09-29	Issued for Review					

NOTES

1. Loads, breakers and cables are from ELE-CAL-001, Electrical Load Analysis, and ELE-CAL-004, Cable Sizing, Short Circuit and Arc-Flash Assessment.
2. Load per phase is connected kVA. Odd circuits are on the left bus, even circuits on the right; multi-pole breakers take consecutive positions on one side.
3. Receptacle circuits are GFCI; heat tracing circuits have 30 mA equipment ground-fault protection.
4. Restart delays on E-161, UH-101 and AC-102A limit the load picked up by the standby generator (ELE-CAL-002).

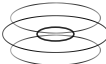
DP-101 DISTRIBUTION PANELBOARD

480Y/277 V, 3-phase, 4-wire, 225 A copper bus, main lugs only (fed from ATS-101, protected by MCB-101 / G-101 breaker), 84 circuits in two 42-circuit sections (DP-101 section A circuits 1-42, section B circuits 43-84 through-fed from A), 22 kA fully rated, NEMA 1, surface, B-102 south wall, SPD Type 2 (SPD-102). XF-102 load shown at its 15 kVA rating.

Table 1-1: DP-101 Circuit Schedule

Ckt	Load	Tag	Poles	Trip, A	Cable	kVA A	kVA B	kVA C	Notes
1-3-5	Inlet SDV NPS 12, electro-hydraulic spring-return actuator, pump motor	SDV-101	3	15	P-101	0.40	0.40	0.40	
2-4-6	OPSS SDV NPS 12, electro-hydraulic spring-return actuator, pump motor	SDV-102	3	15	P-102	0.40	0.40	0.40	
7-9-11	Outlet SDV NPS 12, electro-hydraulic spring-return actuator, pump motor	SDV-103	3	15	P-103	0.40	0.40	0.40	
8-10-12	Meter run valve MOV-111 NPS 10 Cl 600, electric quarter-turn actuator 480 V	MOV-111	3	15	P-104	0.58	0.58	0.58	
13-15-17	Meter run valve MOV-112 NPS 10 Cl 600, electric quarter-turn actuator 480 V	MOV-112	3	15	P-105	0.58	0.58	0.58	
14-16-18	Meter run valve MOV-121 NPS 10 Cl 600, electric quarter-turn actuator 480 V	MOV-121	3	15	P-106	0.58	0.58	0.58	
19-21-23	Meter run valve MOV-122 NPS 10 Cl 600, electric quarter-turn actuator 480 V	MOV-122	3	15	P-107	0.58	0.58	0.58	
20-22-24	Meter run valve MOV-115 NPS 10 Cl 600, electric quarter-turn actuator 480 V	MOV-115	3	15	P-108	0.58	0.58	0.58	
25-27-29	Flow control valve FCV-131, electric modulating actuator 480 V (duty)	FCV-131	3	15	P-109	0.40	0.40	0.40	
26-28-30	Flow control valve FCV-132, electric modulating actuator 480 V (standby)	FCV-132	3	15	P-110	0.40	0.40	0.40	
31-33-35	B-101 electric unit heater 7.5 kW, Class I Div 2, thermostat	UH-101	3	15	P-111	2.50	2.50	2.50	Restart delay, ELE-CAL-002
32-34-36	B-101 ventilation exhaust fan duty 250 cfm, Class I Div 2 motor	EF-101A	3	15	P-112	0.24	0.24	0.24	
37-39-41	B-101 ventilation exhaust fan standby 250 cfm, Class I Div 2 motor	EF-101B	3	15	P-113	0.24	0.24	0.24	
38-40-42	B-102 wall-mount AC 2.0 ton with 5 kW electric heat (lead)	AC-102A	3	15	P-114	1.89	1.89	1.89	Restart delay, ELE-CAL-002
43-45-47	B-102 wall-mount AC 2.0 ton with 5 kW electric heat (lag)	AC-102B	3	15	P-115	1.89	1.89	1.89	
44-46-48	Main gate swing operator 0.5 hp 480 V 3-phase (one per leaf)	GO-101A	3	15	P-116	0.25	0.25	0.25	
49-51-53	Main gate swing operator 0.5 hp 480 V 3-phase (one per leaf)	GO-101B	3	15	P-117	0.25	0.25	0.25	
50-52-54	Portable equipment receptacle 480 V 3-phase 30 A, Class I Div 2 (interlocked)	RCP-101	3	30	P-118	3.92	3.92	3.92	
55-57-59	Fuel gas electric preheater on 2" -F-1050 upstream of PCV-161 (FG-101), explosion-proof Class I Div 2, 5 kW rated, outlet 105 F	E-161	3	15	P-119	1.67	1.67	1.67	Restart delay, ELE-CAL-002
56-58-60	XF-102 15 kVA transformer primary (feeds LP-101)	XF-102	3	25	P-005	5.00	5.00	5.00	
61	Area lighting circuit LTG-1: South area poles, B-102 and G-101 wall packs	LTG-1	1	15	P-120	1.04			Via LC-101
62	Area lighting circuit LTG-2: West/meter area poles and SK-110 canopy	LTG-2	1	15	P-121	1.01			Via LC-101
63	Area lighting circuit LTG-3: Control valve, heater area poles, B-101 wall pack	LTG-3	1	15	P-122		0.82		Via LC-101
64	SPARE	-	3	20	-				



 TORUS		· Owner PANEL SCHEDULES					Document No.		ELE-LST-002				
							Revision / Date		A · September 29, 2026				
							Issue purpose		Issued for Review				
ELECTRICAL · PANEL SCHEDULES													
Ckt	Load					Tag	Poles	Trip, A	Cable	kVA A	kVA B	kVA C	Notes
65	SPARE					-	3	20	-				
70	SPARE					-	1	20	-				
71	SPARE					-	1	20	-				
72	SPACE					-	3	-	-				
73	SPACE					-	3	-	-				

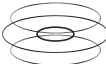
Connected load per phase: A 24.81 kVA, B 23.58 kVA, C 22.76 kVA; total 71.15 kVA; phase imbalance 9 % of average; maximum phase current 89.5 A.

LP-101 LIGHTING AND POWER PANELBOARD

208Y/120 V, 3-phase, 4-wire, 125 A copper bus, 60 A main breaker, 42 circuits, 10 kA, NEMA 1, surface, B-102 south wall, SPD Type 2 (SPD-103), fed from XF-102.

Table 1-2: LP-101 Circuit Schedule

Ckt	Load	Tag	Poles	Trip, A	Cable	kVA A	kVA B	kVA C	Notes
1-3	24 VDC battery charger 50 A, 208 V 1-phase input	BC-101A	2	15	P-201	0.92	0.92		
2-4	24 VDC battery charger 50 A, 208 V 1-phase input	BC-101B	2	15	P-202	0.92	0.92		
5-7	B-101 wall-mount AC 1.5 ton, Class I Div 2 package, 208 V 1-phase	AC-101	2	20	P-204	1.11		1.11	
6	UPS 1.5 kVA on-line, 120 V input	UPS-101	1	20	P-203			1.26	
8	B-102 interior lighting, 6 x 40 W LED	LTG-B102	1	20	P-205	0.25			
9	B-101 interior lighting, 2 x 40 W LED Class I Div 2	LTG-B101	1	20	P-206		0.08		
10	B-102 duplex receptacles, north wall (3 x 180 VA)	REC-B102-1	1	20	P-207		0.54		GFCI
11	B-102 duplex receptacles, south wall (3 x 180 VA)	REC-B102-2	1	20	P-208			0.54	GFCI
12	B-101 duplex receptacles, Class I Div 2 factory sealed (2 x 180 VA)	REC-B101	1	20	P-209			0.36	GFCI
13	Exterior GFCI receptacles, Class I Div 2: SK-110 and FCV station (2 x 180 VA)	REC-EXT-1	1	20	P-210	0.36			GFCI
14	Exterior GFCI receptacle, Class I Div 2: inlet area (1 x 180 VA)	REC-EXT-2	1	20	P-211	0.18			GFCI
15	Exterior GFCI receptacle, H-101 burner end (1 x 180 VA)	REC-EXT-3	1	20	P-212		0.18		GFCI
16	GC oven / analytical heater (generator-backed, not on UPS)	AE-141H	1	20	P-213		0.35		
17	GC sample conditioning enclosure heater 200 W	SCS-141	1	20	P-214			0.20	
18	Heat tracing circuit HT-1080: 3/8 in analyzer transport 1080, 16 ft x 15 W/ft self-regulating, plus SP-141 heated regulator 100 W, controller + GFEP	HT-1080	1	20	P-215			0.34	GFEP 30 mA
19	Heat tracing circuit HT-1139: 1/4 in composite sampler line 1139, 16 ft x 15 W/ft self-regulating, controller + GFEP	HT-1139	1	20	P-216	0.24			GFEP 30 mA
20	AT-142 and AT-143 analyzer enclosure heaters 2 x 100 W	AHT-142/143	1	20	P-217	0.20			
21	BMS-150 panel (SIL 2 BMS): controller, igniter BY-153, XV-150A/B/C, TCV-152 actuator, flame rod BE-153A and UV scanner BE-153B	CP-150	1	20	P-218		0.32		
22	Fuel gas SDV NPS 1, electro-hydraulic actuator pump 0.25 hp 120 V	SDV-165	1	15	P-219		0.44		
23	G-101 engine block heater 1,500 W 120 V	G-101BH	1	20	P-220			1.50	
24	G-101 starting battery charger 12 VDC 6 A, 120 V	G-101BC	1	20	P-221			0.11	
25	CP rectifier (ICCP) 24 V / 8 A rated, 120 V 1-phase input, B-102 south wall	RECT-101	1	20	P-222	0.35			
26	SPARE	-	1	20	-				
27	SPARE	-	1	20	-				
28	SPARE	-	1	20	-				
29	SPARE	-	1	20	-				
30	SPARE	-	2	20	-				
31	SPACE	-	1	-	-				

TORUS		· Owner PANEL SCHEDULES				Document No.		ELE-LST-002					
						Revision / Date		A · September 29, 2026					
						Issue purpose		Issued for Review					
ELECTRICAL · PANEL SCHEDULES													
Ckt	Load					Tag	Poles	Trip, A	Cable	kVA A	kVA B	kVA C	Notes
33	SPACE					-	1	-	-				

Connected load per phase: A 4.54 kVA, B 3.76 kVA, C 5.43 kVA; total 13.72 kVA; phase imbalance 36 % of average; maximum phase current 45.2 A.

UP-101 UPS DISTRIBUTION PANEL

120 V, 1-phase, 2-wire (from UPS-101 1.5 kVA through maintenance bypass switch), 125 A bus, 20 A main breaker, 12 circuits, 10 kA, B-102 east wall. Branch breakers 10 A so that the UPS inverter current limit (200 % for 100 ms, 25 A) or the static bypass can clear branch faults.

Table 1-3: UP-101 Circuit Schedule

Ckt	Load	Tag	Poles	Trip, A	Cable	Peak, W	Notes
1	Operator / engineering workstation and monitor	HMI-101	1	10	P-301	170	
2	Network video recorder and 4 PoE cameras	NVR-101	1	10	P-302	110	
3	demarcation panel 120 VAC supply (HOLD H-14)	JB-W01	1	10	P-303	100	
4	V-101 dump valve electric actuator (running 60 W, standby 10 W)	LCV-104	1	10	P-304	60	
5	V-101 liquid outlet SDV, electric spring-return fail-closed actuator (holding 20 W, stroke 100 W)	SDV-106	1	10	P-305	100	
6	Mast base enclosure: surge-protected 120 VAC outlet for mast-mounted telecom equipment (typical, HOLD H-15)	ANT-201	1	10	P-306	50	
7	SPARE	-	1	10	-		
8	SPARE	-	1	10	-		
9	SPARE	-	1	10	-		
10	SPACE	-	1	-	-		
11	SPACE	-	1	-	-		
12	SPACE	-	1	-	-		

Connected peak load 590 W; UPS rating 1.5 kVA (ELE-CAL-003, UPS and Battery Sizing).

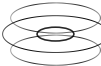
DCP-101 24 VDC DISTRIBUTION PANEL

24 VDC, 2-wire, negative grounded at DCP-101 only (IEEE 946), 125 A bus, 18 positions, DC-rated breakers 10 kA at 48 VDC, bus voltage monitor EI-210A and ground-fault detector to RTU, B-102 north wall.

Table 1-4: DCP-101 Circuit Schedule

Pos	Load	Tag	Poles	Trip, A	Cable	Peak, W	Notes
1	Battery BT-101 (400 Ah) via battery disconnect	BT-101	2P DC	100	D-003	-	Main / battery
2	Charger BC-101A output	BC-101A	2P DC	70	D-001	-	
3	Charger BC-101B output	BC-101B	2P DC	70	D-002	-	
4	RTU panel CP-102A (RTU, display, switch, relays, field loop power)	CP-102A	1P DC	6	D-101	107	
5	Safety PLC panel CP-102B, with SDV solenoids, gas / fire / smoke detectors and beacons it powers	CP-102B	1P DC	12	D-102	214	
6	Measurement panel CP-102C (flow computer, switch, isolators)	CP-102C	1P DC	6	D-103	49	
7	Telecommunications rack TR-102 (router, secondary path, firewall, switch, time server)	TR-102	1P DC	6	D-104	85	
8	Demarcation interface panel, B-102 side	WDP-101	1P DC	6	D-105	10	
9	B-101 analyzer DC distribution: AT-141, AT-142, AT-143, AT-144, SMP-146	JB-140D	1P DC	6	D-106	115	
10	SK-110 ultrasonic meter electronics FT-111, FT-121	JB-110D	1P DC	6	D-107	20	
11	FG-101 Coriolis transmitter FT-163	FT-163	1P DC	6	D-108	7	
12	SPARE	-	1P DC	10	-		
13	SPARE	-	1P DC	10	-		



 TORUS		· Owner PANEL SCHEDULES				Document No.		ELE-LST-002			
						Revision / Date		A · September 29, 2026			
						Issue purpose		Issued for Review			
ELECTRICAL · PANEL SCHEDULES											
Pos	Load					Tag	Poles	Trip, A	Cable	Peak, W	Notes
14	SPARE					-	1P DC	10	-		
15	SPARE					-	1P DC	10	-		
16	SPACE					-	1P DC	-	-		
17	SPACE					-	1P DC	-	-		
18	SPACE					-	1P DC	-	-		

DC connected peak 608 W; continuous 558 W (ELE-CAL-003, UPS and Battery Sizing).

