DocuSign Envelope ID: 24381753-08F0-4DCD-B103-7A44A7082BFA

PSI ADDRESS TABLE

ADDRESS	DESCRIPTION
%I50.0	MAINS SURGE DIVERTER FAULT
%I50.1	GENERATOR SERVICE REQUIRED
%I50.2	GENERATOR FUEL LEVEL NOT LOW
%I50.3	GENERATOR RUNNING
%I50.4	GENERATOR FAULT
%I50.5	AUTOMATIC TRANSFER SWITCH IN POSITION 1 (NORMAL SUPPLY)
%I50.6	AUTOMATIC TRANSFER SWITCH IN POSITION 2 (STANDBY SUPPLY)
%I50.7	AUTOMATIC TRANSFER SWITCH AVAILABLE
%I51.0	SERVICE PROTECTION DEVICE TRIPPED
%I51.1	STANDBY SUPPLY MAIN SWITCH TRIPPED
%I51.2	(SPARE) DI
%I51.3	(SPARE) DI
%I51.4	(SPARE) DI
%I51.5	(SPARE) DI
%I51.6	(SPARE) DI
%I51.7	(SPARE) DI
%Q30.0	GENERATOR TEST REQUEST
%Q30.1	(SPARE) DO
%Q30.2	(SPARE) DO
%Q30.3	(SPARE) DO
%Q30.4	(SPARE) DO
%Q30.5	(SPARE) DO
%Q30.6	(SPARE) DO
%Q30.7	(SPARE) DO
%I52.0	UNIT 1 SELECTED NORMAL
%I52.1	UNIT 1 RUNNING
%I52.2	UNIT 1 AVAILABLE
%I52.3	UNIT 1 MOTOR OVERLOAD
%I52.4	UNIT 1 AUTO TRANSFORMER OVER TEMPERATURE
%I52.5	UNIT 1 MOTOR OVER TEMPERATURE
%I52.6	(SPARE) DI
%I52.7	UNIT 1 LEAK
%I53.0	UNIT 3 SELECTED NORMAL
%I53.1	UNIT 3 RUNNING
%I53.2	UNIT 3 AVAILABLE
%I53.3	UNIT 3 MOTOR OVERLOAD
%I53.4	UNIT 3 STARTER OVER TEMPERATURE
%I53.5	UNIT 3 MOTOR OVER TEMPERATURE
%I53.6	(SPARE) DI
%I53.7	UNIT 3 LEAK
%Q31.0	UNIT 1 REQUEST TO START
%Q31.1	UNIT 1 MOTOR OVERLOAD RESET
%Q31.2	UNIT 3 REQUEST TO START
%Q31.3	UNIT 3 MOTOR OVERLOAD RESET
%Q31.4	(SPARE) DO
%Q31.5	(SPARE) DO
%Q31.6	(SPARE) DO
%Q31.7	(SPARE) DO
%IW54	UNIT 1 CURRENT *OR UNIT 1 VSC FEEDBACK*
%IW56	UNIT 1 POWER
%IW58	UNIT 3 CURRENT *OR UNIT 3 VSC FEEDBACK*
%IW60	UNIT 3 POWER
%I62.0	UNIT 2 SELECTED NORMAL
%I62.1	UNIT 2 RUNNING
%I62.2	UNIT 2 AVAILABLE
%I62.3	UNIT 2 MOTOR OVERLOAD
%I62.4	UNIT 2 AUTO TRANSFORMER OVER TEMPERATURE
%I62.5	UNIT 2 MOTOR OVER TEMPERATURE
%I62.6	(SPARE) DI
%I62.7	UNIT 2 LEAK
%I63.0	UNIT 4 SELECTED NORMAL
%I63.1	UNIT 4 RUNNING
%I63.2	UNIT 4 AVAILABLE
%I63.3	UNIT 4 MOTOR OVERLOAD
%I63.4	UNIT 4 STARTER OVER TEMPERATURE
%I63.5	UNIT 4 MOTOR OVER TEMPERATURE
%I63.6	(SPARE) DI
%I63.7	UNIT 4 LEAK

PSI ADDRESS TABLE

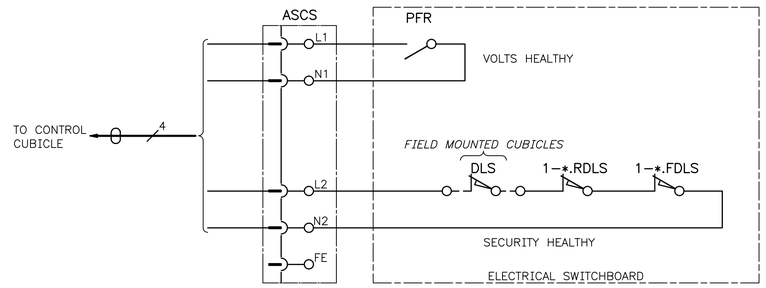
ADDRESS	DESCRIPTION
%Q32.0	UNIT 2 REQUEST TO START
%Q32.1	UNIT 2 MOTOR OVERLOAD RESET
%Q32.2	UNIT 4 REQUEST TO START
%Q32.3	UNIT 4 MOTOR OVERLOAD RESET
%Q32.4	(SPARE) DO
%Q32.5	(SPARE) DO
%Q32.6	(SPARE) DO
%Q32.7	(SPARE) DO
%IW64	UNIT 2 CURRENT *OR UNIT 2 VSC FEEDBACK*
%IW66	UNIT 2 POWER
%IW68	UNIT 4 CURRENT *OR UNIT 4 VSC FEEDBACK*
%IW70	UNIT 4 POWER

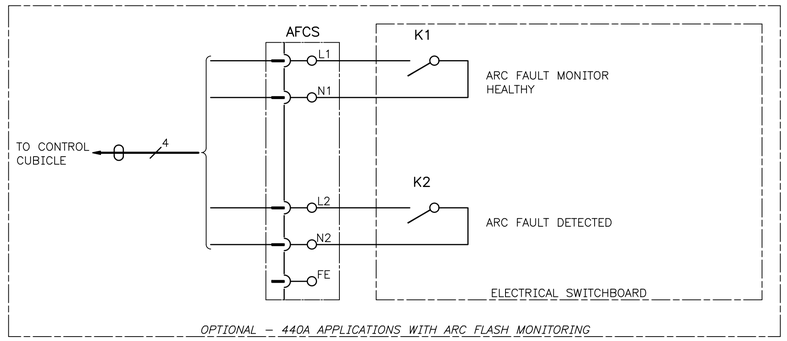
COMMUNICATION REGISTER TABLE

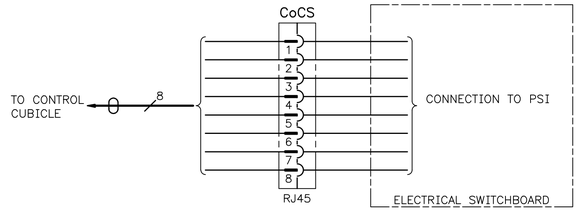
LOCATION	DEVICE	REGISTER	DESCRIPTIONS	
			MANUFACTURER	SCADA TEMPLATE
ATr >100A	MoCB	1027	AVERAGE 3 PHASE CURRENT (A)	
		1037	TOTAL AVERAGE POWER (kW)	
ESS	ESS	40005	CURRENT (A)	
		40608	AVERAGE 3 PHASE POWER (kW)	
		40604	STARTER STATE	
		40619	TRIP CODE	
			REGISTERS SHOWN FOR MCD500, TO FUNCTION IN MCD600 ESS TO BE SET TO LEGACY MODE BY SETTING REGISTER 40001 TO 0	
VSC	VSC	1614	CURRENT (A)	
		1610	POWER (kW)	
		1603	STATUS WORD	
		1690	ALARM WORD	
BORE	RTD RELAY	2000	TEMPERATURE	
INCOMER	POWER METER		HMI MODE TO BE SET IEC, DATE FORMAT TO DD/MM/YY	
		3060	ACTIVE POWER INSTANT	GENERATED, REAL INSTANT, kW
		3068	REACTIVE POWER INSTANT	GENERATED, REACTIVE INSTANT, kVAR
		3076	APPARENT POWER INSTANT	GENERATED, APPARENT INSTANT, kVA
		3020	VOLTAGE L1–L2 (V)	
		3022	VOLTAGE L2–L3 (V)	
		3024	VOLTAGE L3–L1 (V)	
		3000	CURRENT L1 (A)	
		3002	CURRENT L2 (A)	
		3004	CURRENT L3 (A)	
		3110	FREQUENCY (Hz)	
		21328	TOTAL HARMONIC DISTORTION, VOLTAGE (%)	THD – VOLTAGE
		21300	TOTAL DEMAND DISTORTION, CURRENT A (%)	THD – L1 CURRENT
		21302	TOTAL DEMAND DISTORTION, CURRENT B (%)	THD – L2 CURRENT
		21304	TOTAL DEMAND DISTORTION, CURRENT C (%)	THD – L3 CURRENT
		2700	ACTIVE ENERGY DELIVERED	GENERATED, REAL TOTAL, kWh
		2702	ACTIVE ENERGY RECEIVED	CONSUMED, REAL TOTAL, kWh
		2708	REACTIVE ENERGY DELIVERED	GENERATED, REACTIVE TOTAL, kVARh
		2710	REACTIVE ENERGY RECEIVED	CONSUMED, REACTIVE TOTAL, kVARh
ADDITIONAL POWER METER REGISTERS FOR RENEWABLE ENERGY SITES				
		3028	VOLTAGE L1–N (V)	
		3030	VOLTAGE L2–N (V)	
		3032	VOLTAGE L3–N (V)	

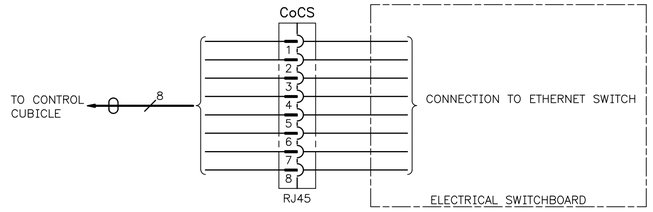
CODE SCHEDULE

A	AMPERE
AFCS	ARC FLASH CABLE CONNECTOR SOCKET
ASCS	ANCILLARY SIGNALS CABLE CONNECTOR SOCKET
ATr	AUTO TRANSFORMER
CoCS	COMMUNICATION CABLE CONNECTOR SOCKET
DLS	DOOR LIMIT SWITCH
ESS	ELECTRONIC SOFT STARTER
FDLS	FRONT DOOR LIMIT SWITCH
kVA	KILOVOLT AMPERE
kVAR	KILOVOLT AMPERE REACTIVE
kVARh	KILOVOLT AMPERE REACTIVE HOUR
kW	KILOWATT
kWh	KILOWATT HOUR
MoCB	MOTOR CIRCUIT BREAKER
PFR	PHASE FAILURE RELAY
PMR	PUMP MONITORING RELAY
RDLS	REAR DOOR LIMIT SWITCH
RTD	RESISTANCE THERMAL DEVICE
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
V	VOLT
VSC	VARIABLE SPEED CONTROLLER









GENERAL NOTES

1. STANDARD CONTROL SYSTEM I/O SHOWN. SCADA DESIGN ENGINEER SHALL DETERMINE ADDITIONAL PROJECT I/O REQUIREMENTS
2. SCADA DESIGN ENGINEER TO DETERMINE REQUIREMENTS FOR SURGE PROTECTION OF SIGNALS TO PLANT CONTROL DEVICE

DESIGN NOTES

1. *MODULES FORMING THE STANDARD ADDRESSES ARE IDENTICAL FOR EACH SITE. HOWEVER DEPENDING ON PROJECT REQUIREMENTS INDIVIDUAL IO MAY NOT BE CONNECTED*
2. *STANDARD CONNECTIONS SHALL NOT BE CHANGED OR REMOVED. HOWEVER LOCATIONS LABELLED (SPARE) CAN BE UTILISED FOR SITE IO REQUIREMENTS.*
3. *PHYSICAL CONNECTION TO CONTROL INFRASTRUCTURE IS VIA PLUGS IN THE BASE OF THE ELECTRICAL SWITCHBOARDS INCOMER CUBICLE.*
4. *ALL CONNECTIONS WITHIN THE ELECTRICAL SWITCHBOARD INCLUDING TO ASCS AND CoCS PLUGS BY ELECTRICAL MANUFACTURES. TERMINATION AND CONNECTION OF ASCS AND CoCS PLUGS IN BASE OF ELECTRICAL CUBICLE BY SCADA INSTALLERS. PLUGS SUPPLIED BY ELECTRICAL MANUFACTURES*
5. *WEB SERVER TO BE SET FOR FULL ACCESS WITH PASSWORD PROTECTION DURING COMMISSIONING*
6. *FOR UNITS 5 TO 8 CONTINUE SEQUENCE STARTING FROM UNIT 1*
   UNIT 5 CONNECTIONS SAME AS UNIT 1
   UNIT 6 CONNECTIONS SAME AS UNIT 2
   UNIT 7 CONNECTIONS SAME AS UNIT 3
   UNIT 8 CONNECTIONS SAME AS UNIT 4

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD
J	01/2024		TDD CURRENT (%) REPLACED WITH THD CURRENT A, B & C %	SAM	TK	EG
I	01/2023		REDESIGNED FOR SIEMENS ET200SP	PH	SG	EG
H	12/2021		POWER METER REGISTERS REVISED; SUPPLY AUTHORITY CONTACTS DELETED	PH	TL	EG
G	03/2021		ESS REGISTERS REVISED	PH	TL	EG
F	10/2020		POWER METER REGISTERS REVISED	PH	EG	NJ
E	11/2019		UNIT 1 AND 2 OVER TEMPERATURE OUTPUTS REVISED; ATR,	PH	EG	NJ

566
810

DESIGN SURVEY NONE | VERTICAL DATUM NONE | COORDINATE SYS NONE | ASCON SURVEY NONE | DES REF

DES CALC E FONG | DES CHD K O'GRADY | DRN P HARVEY | Q.C. CHD S MEMORY

NORTH POINT

SUBMITTED 24/07/2017 E FONG (SIGNED) SENIOR ENGINEER – ELECTRICAL

RECOMMENDED 24/07/2017 K O'GRADY (SIGNED) PRINCIPAL ENGINEER – ELECTRICAL

APPROVED 24/07/2017 N JOHNSON (SIGNED) SNR PRINCIPAL ENGINEER – ELECT

ENGINEERING

WATER CORPORATION

ELECTRICAL STANDARD SWITCHBOARD DESIGNS
SMALL PUMP STATIONS
SWITCHBOARD REFERENCE DRAWING
MISCELLANEOUS CONTROL INTERCONNECTIONS

FILE | PLAN | CAD | ISSUE J | ORIGINAL SHEET SIZE A1
PROJECT MN01–25–1 | MF

© THIS DRAWING IS THE PROPERTY OF THE WATER CORPORATION. IT SHALL NOT BE COPIED WITHOUT PERMISSION.

STANDARDS\APPROVED\MN01\PREAPPROVAL\MN01-025-001-01J 17:19 12/01/2024 MEMORYS0/NB46194