

Earthsafe Fuel System Controller BMS Integration Manual

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Earthsafe Systems, Inc.
BMS Integration Master Points List

- 1 **General:** Earthsafe controllers are designed to be integrated to standard BMS systems using a variety of protocols: BACnet - Modbus - Metasys N2 - or LAN. The BACnet and Modbus protocols may be either TCP/IP (Ethernet) or MSTP (RS-485). The protocol must be specified and the adapter is inherently capable of Ethernet or RS-485.
- 2 **Ethernet.** Where ethernet is used, the IP address must be specified and the controller can be programmed for that address. Additional IP addresses may need to be assigned to the fuel system, so that other fuel system controllers may operate on the same network.
- 3 **RS-495.** Where RS-485 communication is used: the baud rate, ID, and instance number need to be specified by the user for programming the controller.
- 4 **Points List:** The Master Points list includes designations for most configurations. Not all of the Master points will be applicable for any one application. The applicable points will be indicated for the specific application.

Earthsafe Systems, Inc.
BMS Integration Master Points List

Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:0	0	D1-16 ON Setup	1	10001	0			Acive Bit Validates Data Range
	1	D64-80 ON Alarm	2		1			
	2	D81-96 ON Leak	3		2			
	3	D97-112 ON DT1	4		3			
	4	D113-128 ON DT2	5		4			
	5	D129-144 ON DT3	6		5			
	6	D145-160 ON DT4	7		6			
	7	D161-176 ON DP1	8		7			
	8	D177-192 ON DP2	9		8			
	9	D193-208 ON DP3	10		9			
	10	D209-224 ON DP4	11		10			
	11	D225-240 ON TS12	12		11			
	12	D241-256 ON TS34	13		12			
	13	D257-272 ON FL1	14		13			
	14	D273-288 ON FL2	15		14			
	15	D289-304 ON FP1	16		15			
N7:1	0	D305-320 ON FP2	17	10002	0			Acive Bit Validates Data Range
	1	D321-336 ON FLT1	18		1			
	2	D337-352 ON FLT2	19		2			
	3	D353-368 ON FLT3	20		3			
	4	D369-384 ON FLT4	21		4			
	5	D385-400 ON TK1	22		5			
	6	D401-416 ON TK2	23		6			
	7	D417-432 ON TK3	24		7			
	8	D433-448 ON TK4	25		8			
	9	D449-464 ON VRLK	26		9			
	10	D465-480 ON VRT1	27		10			
	11	D481-496 ON VRT2	28		11			
	12	D497-512 ON VRT3	29		12			
	13	D513-528 ON VRT4	30		13			
	14	D529-544 ON DX1	31		14			
	15	D545-560 ON DX2	32		15			
N7:2	0	D561-576 ON DX3	33	10003	0			Acive Bit Validates Data Range
	1	D577-592 ON DX4	34		1			
	2	D593-608 ON DX5	35		2			
	3	D609-624 ON DX6	36		3			
	4	D625-640 ON DX7	37		4			
	5	D641-656 ON DX8	38		5			
	6	A1-10 ON FLT 1	39		6			
	7	A11-20 ON FLT2	40		7			
	8	A21-30 ON TK1	41		8			
	9	A31-40 ON TK2	42		9			
	10	A41-50 ON TK3	42		10			
	11	A51-60 ON TK4	44		11			
	12	A61-70 ON VRT1	45		12			
	13	A71-80 ON VRT2	46		13			
	14	A81-90 ON VRT3	47		14			
	15	A91-100 ON VRT4	48		15			
N7:3	0	A101-110 ON AX1	49	10004	0			Acive Bit Validates Data Range
	1	A111-120 ON AX2	50		1			
	2	A121-130 ON AX3	51		2			
	3	D!52	52		3			
	4	D!53	53		4			
	5	D!54	54		5			
	6	D!55	55		6			
	7	D!56	56		7			
	8	D!57	57		8			
	9	D!57	58		9			
	10	D!59	59		10			
	11	D!60	60		11			
	12	D!61	61		12			
	13	D!62	62		13			
	14	D!63	63		14			
	15	D!64	64		15			

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:4	0	All Common Alarm	65	10005	0	1		Summary Alarms
	1	Pumps Com Alarm	66		1	2		
	2	Genset Com Alarm	67		2	3		
	3	Filter Com Alarm	68		3	4		
	4	Leak Com Alarm	69		4	5		
	5	Tank Com Alarm	70		5	6		
	6	DI71	71			6		
	7	DI72	72			7		
	8	DI73	73			8		
	9	DI74	74			9		
	10	DI75	75			10		
	11	DI76	76			11		
	12	DI77	77			12		
	13	DI78	78			13		
	14	DI79	79			14		
	15	DI80	80			15		
N7:5	0	Gen Alarm - Leak	81	10006	0	7		Leak Alarms
	1	Leak 1 Alarm	82		1	8		
	2	Leak 2 Alarm	83		2	9		
	3	Leak 3 Alarm	84		3	10		
	4	Leak 4 Alarm	85		4	11		
	5	Leak 5 Alarm	86		5	12		
	6	Leak 6 Alarm	87		6	13		
	7	Leak 7 Alarm	88		7	14		
	8	Leak 8 Alarm	89		8	15		
	9	Leak 9 Alarm	90		9	16		
	10	Leak 10 Alarm	91		10	17		
	11	Leak 11 Alarm	92		11	18		
	12	Leak 12 Alarm	93		12	19		
	13	Leak 13 Alarm	94		13	20		
	14	Leak 14 Alarm	95		14	21		
	15	Leak 15 Alarm	96		15	22		
N7:6	0	Gen Alarm - DT1	97	10007	0	23		Generator Day Tank 1
	1	DT1 High Level	98		1	24		
	2	DT1 Low Level	99		2	25		
	3	DT1 Critical Low	100		3	26		
	4	DT1 MAN Mode	101		4	27		
	5	DT1 AUTO Mode	102		5	28		
	6	DT1 - V1 Active	103		6	29		
	7	DT1 - V2 Active	104		7	30		
	8	DT1 Normal Level	105		8	31		
	9	DT1 Fill Request	106		9	32		
	10	DT1 Pump 1 ON	107		10	33		
	11	DT1 Pump 2 ON	108		11	34		
	12	DT1 Leak	109		12			
	13	DI110	110			13		
	14	DI111	111			14		
	15	DI112	112			15		
N7:7	0	Gen Alarm - DT2	113	10008	0	35		Generator Day Tank 2
	1	DT2 High Level	114		1	36		
	2	DT2 Low Level	115		2	37		
	3	DT2 Critical Low	116		3	38		
	4	DT2 MAN Mode	117		4	39		
	5	DT2 AUTO Mode	118		5	40		
	6	DT2 - V1 Active	119		6	41		
	7	DT2 - V2 Active	120		7	42		
	8	DT2 Normal Level	121		8	43		
	9	DT2 Fill Request	122		9	44		
	10	DT2 Pump 1 ON	123		10	45		
	11	DT2 Pump 2 ON	124		11	46		
	12	DT2 Leak	125		12			
	13	DI126	126			13		
	14	DI127	127			14		
	15	DI128	128			15		

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:8	0	Gen Alarm - DT3	129	10009	0	47		Generator Day Tank 3
	1	DT3 High Level	130		1	48		
	2	DT3 Low Level	131		2	49		
	3	DT3 Critical Low	132		3	50		
	4	DT3 MAN Mode	133		4	51		
	5	DT3 AUTO Mode	134		5	52		
	6	DT3 - V1 Active	135		6	53		
	7	DT3 - V2 Active	136		7	54		
	8	DT3 Normal Level	137		8	55		
	9	DT3 Fill Request	138		9	56		
	10	DT3 Pump 1 ON	139		10	57		
	11	DT3 Pump 2 ON	140		11	58		
	12	DT3 Leak	141		12			
	13	DI142	142		13			
	14	DI143	143		14			
	15	DI144	144		15			
N7:9	0	Gen Alarm - DT4	145	10010	0	57		Generator Day Tank 4
	1	DT4 High Level	146		1	58		
	2	DT4 Low Level	147		2	59		
	3	DT4 Critical Low	148		3	60		
	4	DT4 MAN Mode	149		4	61		
	5	DT4 AUTO Mode	150		5	62		
	6	DT4 - V1 Active	151		6	63		
	7	DT4 - V2 Active	152		7	64		
	8	DT4 Normal Level	153		8	65		
	9	DT4 Fill Request	154		9	66		
	10	DT4 Pump 1 ON	155		10	67		
	11	DT4 Pump 2 ON	156		11	68		
	12	DT4 Leak	157		12			
	13	DI158	158		13			
	14	DI159	159		14			
	15	DI160	160		15			
N7:10	0	Gen Alarm - DP1	161	10011	0	69		Duplex Pump 1
	1	DP1 Pump 1 MAN	162		1	70		
	2	DP1 Pump 1 AUTO	163		2	71		
	3	DP1 Pump 2 MAN	164		3	72		
	4	DP1 Pump 2 AUTO	165		4	73		
	5	DP1 ALT Mode ON	166		5	74		
	6	DP1 Pump 1 Lead	167		6	75		
	7	DP1 Pump 2 Lag	168		7	76		
	8	DP1 Pump 1 ON	169		8	77		
	9	DP1 Pump 2 ON	170		9	78		
	10	DP1 Pump 1 Alarm	171		10	79		
	11	DP1 Pump 2 Alarm	172		11	80		
	12	DP1 Leak	173		12			
	13	DP1 Active	174		13			
	14	DI175	175		14			
	15	DI176	176		15			
N7:11	0	Gen Alarm - DP2	177	10012	0	81		Duplex Pump 2
	1	DP2 Pump 1 MAN	178		1	82		
	2	DP2 Pump 1 AUTO	179		2	83		
	3	DP2 Pump 2 MAN	180		3	84		
	4	DP2 Pump 2 AUTO	181		4	85		
	5	DP2 ALT Mode ON	182		5	86		
	6	DP2 Pump 1 Lead	183		6	87		
	7	DP2 Pump 2 Lag	184		7	88		
	8	DP2 Pump 1 ON	185		8	89		
	9	DP2 Pump 2 ON	186		9	90		
	10	DP2 Pump 1 Alarm	187		10	91		
	11	DP2 Pump 2 Alarm	188		11	92		
	12	DP 2 Leak	189		12			
	13	DP 2 Active	190		13			
	14	DI191	191		14			
	15	DI192	192		15			

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:12	0	Gen Alarm - DP3	193	10013	0	93		Duplex Pump 3
	1	DP3 Pump 1 MAN	194		1	94		
	2	DP3 Pump 1 AUTO	195		2	95		
	3	DP3 Pump 2 MAN	196		3	96		
	4	DP3 Pump 2 AUTO	197		4	97		
	5	DP3 ALT Mode ON	198		5	98		
	6	DP3 Pump 1 Lead	199		6	99		
	7	DP3 Pump 2 Lag	200		7	100		
	8	DP3 Pump 1 ON	201		8	101		
	9	DP3 Pump 2 ON	202		9	102		
	10	DP3 Pump 1 Alarm	203		10	103		
	11	DP3 Pump 2 Alarm	204		11	104		
	12	DP 3 Leak	205		12			
	13	DP3 Active	206		13			
	14	DI207	207		14			
	15	DI208	208		15			
N7:13	0	Gen Alarm - DP4	209	10014	0	105		Duplex Pump 4
	1	DP4 Pump 1 MAN	210		1	106		
	2	DP4 Pump 1 AUTO	211		2	107		
	3	DP4 Pump 2 MAN	212		3	108		
	4	DP4 Pump 2 AUTO	213		4	109		
	5	DP4 ALT Mode ON	214		5	110		
	6	DP4 Pump 1 Lead	215		6	111		
	7	DP4 Pump 2 Lag	216		7	112		
	8	DP4 Pump 1 ON	217		8	113		
	9	DP4 Pump 2 ON	218		9	114		
	10	DP4 Pump 1 Alarm	219		10	115		
	11	DP4 Pump 2 Alarm	220		11	116		
	12	DP 4 Leak	221		12			
	13	DP4 Active	222		13			
	14	DI223	223		14			
	15	DI224	224		15			
N7:14	0	Gen Alarm-TK Sel	225	10015	0	117		Tank 1-2 Selection
	1	TK Sel-TK1 Low	226		1	118		
	2	TK Sel-TK2 Low	227		2	119		
	3	TK Sel-TK1 MAN	228		3	120		
	4	TK Sel-TK1 AUTO	229		4	121		
	5	TK Sel-TK2 MAN	230		5	122		
	6	TK Sel-TK2 AUTO	231		6	123		
	7	TK Sel-TK1 Avail	232		7	124		
	8	TK Sel-TK2 Avail	233		8	125		
	9	TK Sel-TK1 Active	234		9			
	10	TK Sel-TK2 Active	235		10			
	11	DI236	236		11			
	12	DI237	237		12			
	13	DI238	238		13			
	14	DI239	239		14			
	15	DI240	240		15			
N7:15	0	Gen Alarm-TK Sel	241	10016	0	126		Tank 3-4 Selection
	1	TK Sel-TK3 Low	242		1	127		
	2	TK Sel-TK4 Low	243		2	128		
	3	TK Sel-TK3 MAN	244		3	129		
	4	TK Sel-TK3 AUTO	245		4	130		
	5	TK Sel-TK4 MAN	246		5	131		
	6	TK Sel-TK4 AUTO	247		6	132		
	7	TK Sel-TK3 Avail	248		7	133		
	8	TK Sel-TK4 Avail	249		8	134		
	9	TK Sel-TK3 Active	250		9			
	10	TK Sel-TK4 Active	251		10			
	11	DI252	252		11			
	12	DI253	253		12			
	13	DI254	254		13			
	14	DI255	255		14			
	15	DI256	256		15			

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:16	0	Gen Alrm-TK Fill	257	10017	0	135		Tank 1-2 Fill Station
	1	TK Fill-TK1 Sel	258		1	136		
	2	TK Fill-TK1 Warn	259		2	137		
	3	TK Fill-TK1 High	260		3	138		
	4	TK Fill-TK1 CrHi	261		4	139		
	5	TK Fill-TK1 Avbl	262		5	140		
	6	TK Fill-TK2 Sel	263		6	141		
	7	TK Fill-TK2 Warn	264		7	142		
	8	TK Fill-TK2 High	265		8	143		
	9	TK Fill-TK2 CrHi	266		9	144		
	10	TK Fill-TK2 Avbl	267		10	145		
	11	DI268	268		11			
	12	DI269	269		12			
	13	DI270	270		13			
	14	DI271	271		14			
15	DI272	272		15				
N7:17	0	Gen Alrm-TK Fill	273	10018	0	146		Tank 3-4 Fill Station
	1	TK Fill-TK3 Sel	274		1	147		
	2	TK Fill-TK3 Warn	275		2	148		
	3	TK Fill-TK3 High	276		3	149		
	4	TK Fill-TK3 CrHi	277		4	150		
	5	TK Fill-TK3 Avbl	278		5	151		
	6	TK Fill-TK4 Sel	279		6	152		
	7	TK Fill-TK4 Warn	280		7	153		
	8	TK Fill-TK4 High	281		8	154		
	9	TK Fill-TK4 CrHi	282		9	155		
	10	TK Fill-TK4 Avbl	283		10	156		
	11	DI284	284		11			
	12	DI285	285		12			
	13	DI286	286		13			
	14	DI287	287		14			
15	DI288	288		15				
N7:18	0	Gen Alm-Fill P1	289	10019	0	157		Fill Station Pump 1
	1	TK Fill P1-Sel	290		1	158		
	2	TK Fill P1-Warn	291		2	159		
	3	TK Fill P1-High	292		3	160		
	4	TK Fill P1-CrHi	293		4	161		
	5	TK Fill P1 - TKAv	294		5	162		
	6	TK Fill P1 - ON	295		6	163		
	7	DI296	296		7			
	8	DI297	297		8			
	9	DI298	298		9			
	10	DI299	299		10			
	11	DI300	300		11			
	12	DI301	301		12			
	13	DI302	302		13			
	14	DI303	303		14			
15	DI304	304		15				
N7:19	0	Gen Alm-Fill P2	305	10020	0	164		Fill Station Pump 2
	1	TK Fill P2-Sel	306		1	165		
	2	TK Fill P2-Warn	307		2	166		
	3	TK Fill P2-High	308		3	167		
	4	TK Fill P2-CrHi	309		4	168		
	5	TK Fill P2 - TKAv	310		5	169		
	6	TK Fill P2 - ON	311		6	170		
	7	DI312	312		7			
	8	DI313	313		8			
	9	DI314	314		9			
	10	DI315	315		10			
	11	DI316	316		11			
	12	DI317	317		12			
	13	DI318	318		13			
	14	DI319	319		14			
15	DI320	320		15				

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AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:20	0	Gen Alm-Filter 1	321	10021	0	171		Filter Polisher 1
	1	FLT1-DP Switch	322		1	172		
	2	FLT 1 Water Alarm	323		2	173		
	3	FLT1-Leak Alarm	324		3	174		
	4	FLT1-MAN Mode	325		4	175		
	5	FLT1-AUTO Mode	326		5	176		
	6	FLT1-Flow Alarm	327		6	177		
	7	FLT1-Pump ON	328		7	178		
	8	FLT1-T1 Vlv Open	329		8	179		
	9	FLT1-T1 Vlv Clos	330		9	180		
	10	FLT1-T2 Vlv Open	331		10	181		
	11	FLT1-T2 Vlv Clos	332		11	182		
	12	FLT1-T1 Active	333		12	183		
	13	FLT1-T2 Active	334		13	184		
	14	DI335	335		14			
15	DI336	336		15				
N7:21	0	Gen Alm-Filter 2	337	10022	0	185		Filter Polisher 2
	1	FLT2-DP Switch	338		1	186		
	2	FLT 2 Water Alarm	339		2	187		
	3	FLT2-Leak Alarm	340		3	188		
	4	FLT2-MAN Mode	341		4	189		
	5	FLT2-AUTO Mode	342		5	190		
	6	FLT2-Flow Alarm	343		6	191		
	7	FLT2-Pump ON	344		7	192		
	8	FLT2-T1 Vlv Open	345		8	193		
	9	FLT2-T1 Vlv Clos	346		9	194		
	10	FLT2-T2 Vlv Open	347		10	195		
	11	FLT2-T2 Vlv Clos	348		11	196		
	12	FLT2-T1 Active	349		12	197		
	13	FLT2-T2 Active	350		13	198		
	14	DI351	351		14			
15	DI352	352		15				
N7:22	0	Gen Alm-Filter 3	353	10023	0			Filter Polisher 3
	1	FLT3-DP Switch	354		1			
	2	FLT3 Water Alarm	355		2			
	3	FLT3-Leak Alarm	356		3			
	4	FLT3-MAN Mode	357		4			
	5	FLT3-AUTO Mode	358		5			
	6	FLT3-Flow Alarm	359		6			
	7	FLT3-Pump ON	360		7			
	8	FLT3-T1 Vlv Open	361		8			
	9	FLT3-T1 Vlv Clos	362		9			
	10	FLT3-T2 Vlv Open	363		10			
	11	FLT3-T2 Vlv Clos	364		11			
	12	FLT3-T1 Active	365		12			
	13	FLT3-T2 Active	366		13			
	14	DI367	367		14			
15	DI368	368		15				
N7:23	0	Gen Alm-Filter 4	369	10024	0			Filter Polisher 4
	1	FLT4-DP Switch	370		1			
	2	FLT4-Water Alarm	371		2			
	3	FLT4-Leak Alarm	372		3			
	4	FLT4-MAN Mode	373		4			
	5	FLT4-AUTO Mode	374		5			
	6	FLT4-Flow Alarm	375		6			
	7	FLT4-Pump ON	376		7			
	8	FLT4-T1 Vlv Open	377		8			
	9	FLT4-T1 Vlv Clos	378		9			
	10	FLT4-T2 Vlv Open	379		10			
	11	FLT4-T2 Vlv Clos	380		11			
	12	FLT4-T1 Active	381		12			
	13	FLT4-T2 Active	382		13			
	14	DI383	383		14			
15	DI384	384		15				

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AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:24	0	Gen Alarm-Tank 1	385	10025	0	199		Tank 1 Alarms
	1	TK1 High Alarm	386		1	200		
	2	TK1 High Warning	387		2	201		
	3	TK1 Low Warning	388		3	202		
	4	TK1 Low Alarm	389		4	203		
	5	DI390	390		5			
	6	DI391	391		6			
	7	DI392	392		7			
	8	DI393	393		8			
	9	DI394	394		9			
	10	DI395	395		10			
	11	DI396	396		11			
	12	DI397	397		12			
	13	DI398	398		13			
	14	DI399	399		14			
	15	DI400	400		15			
N7:25	0	Gen Alarm-Tank 2	401	10026	0	204		Tank 2 Alarms
	1	TK2 High Alarm	402		1	205		
	2	TK2 High Warning	403		2	206		
	3	TK2 Low Warning	404		3	207		
	4	TK2 Low Alarm	405		4	208		
	5	DI406	406		5			
	6	DI407	407		6			
	7	DI408	408		7			
	8	DI409	409		8			
	9	DI410	410		9			
	10	DI411	411		10			
	11	DI412	412		11			
	12	DI413	413		12			
	13	DI414	414		13			
	14	DI415	415		14			
	15	DI416	416		15			
N7:26	0	Gen Alarm-Tank 3	417	10027	0	209		Tank 3 Alarms
	1	TK3 High Alarm	418		1	210		
	2	TK3 High Warning	419		2	211		
	3	TK3 Low Warning	420		3	212		
	4	TK3 Low Alarm	421		4	213		
	5	DI422	422		5			
	6	DI423	423		6			
	7	DI424	424		7			
	8	DI425	425		8			
	9	DI426	426		9			
	10	DI427	427		10			
	11	DI428	428		11			
	12	DI429	429		12			
	13	DI430	430		13			
	14	DI431	431		14			
	15	DI432	432		15			
N7:27	0	Gen Alarm-Tank 4	433	10028	0	215		Tank 4 Alarms
	1	TK4 High Alarm	434		1	216		
	2	TK4 High Warning	435		2	217		
	3	TK4 Low Warning	436		3	218		
	4	TK4 Low Alarm	437		4	219		
	5	DI438	438		5			
	6	DI439	439		6			
	7	DI440	440		7			
	8	DI441	441		8			
	9	DI442	442		9			
	10	DI443	443		10			
	11	DI444	444		11			
	12	DI445	445		12			
	13	DI446	446		13			
	14	DI447	447		14			
	15	DI448	448		15			

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:28	0	Gen Alm-VR Leak	449	10029	0	220		Veeder Root Leak Alarms
	1	VR Leak 1	450		1			
	2	VR Leak 2	451		2			
	3	VR Leak 3	452		3			
	4	VR Leak 4	453		4			
	5	VR Leak 5	454		5			
	6	VR Leak 6	455		6			
	7	VR Leak 7	456		7			
	8	VR Leak 8	457		8			
	9	VR Leak 9	458		9			
	10	VR Leak 10	459		10			
	11	VR Leak 11	460		11			
	12	VR Leak 12	461		12			
	13	VR Leak 13	462		13			
	14	VR Leak 14	463		14			
	15	VR Leak 15	464		15			
N7:29	0	Gen Alm-VR T1	465	10030	0	221		Veeder Root Tank 1 Alarms
	1	VR T1-Tank Leak	466		1	222		
	2	VR T1-High Water	467		2	223		
	3	VR T1-Overfill	468		3	224		
	4	VR T1-Low Level	469		4	225		
	5	VR T1-High Level	470		5	226		
	6	VR T1-Deliv Need	471		6	227		
	7	DI472	472		7			
	8	DI473	473		8			
	9	DI474	474		9			
	10	DI475	475		10			
	11	DI476	476		11			
	12	DI477	477		12			
	13	DI478	478		13			
	14	DI479	479		14			
	15	DI480	480		15			
N7:30	0	Gen Alm-VR T2	481	10031	0	228		Veeder Root Tank 2 Alarms
	1	VR T2-Tank Leak	482		1	229		
	2	VR T2-High Water	483		2	230		
	3	VR T2-Overfill	484		3	231		
	4	VR T2-Low Level	485		4	232		
	5	VR T2-High Level	486		5	233		
	6	VR T2-Deliv Need	487		6	234		
	7	DI488	488		7			
	8	DI489	489		8			
	9	DI490	490		9			
	10	DI491	491		10			
	11	DI492	492		11			
	12	DI493	493		12			
	13	DI494	494		13			
	14	DI494	495		14			
	15	DI496	496		15			
N7:31	0	Gen Alm-VR T3	497	10032	0	235		Veeder Root Tank 3 Alarms
	1	VR T3-Tank Leak	498		1	236		
	2	VR T3-High Water	499		2	237		
	3	VR T3-Overfill	500		3	238		
	4	VR T3-Low Level	501		4	239		
	5	VR T3-High Level	502		5	240		
	6	VR T3-Deliv Need	503		6	241		
	7	DI504	504		7			
	8	DI505	505		8			
	9	DI506	506		9			
	10	DI507	507		10			
	11	DI508	508		11			
	12	DI509	509		12			
	13	DI510	510		13			
	14	DI511	511		14			
	15	DI512	512		15			

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:32	0	Gen Alm-VR T4	513	10033	0	242		Veeder Root Tank 4 Alarms
	1	VR T4-Tank Leak	514		1	243		
	2	VR T4-High Water	515		2	244		
	3	VR T4-Overfill	516		3	245		
	4	VR T4-Low Level	517		4	246		
	5	VR T4-High Level	518		5	247		
	6	VR T4-Deliv Need	519		6	248		
	7	DI520	520		7			
	8	DI521	521		8			
	9	DI522	522		9			
	10	DI523	523		10			
	11	DI524	524		11			
	12	DI525	525		12			
	13	DI526	526		13			
	14	DI527	527		14			
15	DI528	528		15				
N7:33	0	Status 01-01	529	10034	0	249		Other Status Points
	1	Status 01-02	530		1	250		
	2	Status 01-03	531		2	251		
	3	Status 01-04	532		3	252		
	4	Status 01-05	533		4	253		
	5	Status 01-06	534		5	254		
	6	Status 01-07	535		6	255		
	7	Status 01-08	536		7			
	8	Status 01-09	537		8			
	9	Status 01-10	538		9			
	10	Status 01-11	539		10			
	11	Status 01-12	540		11			
	12	Status 01-13	541		12			
	13	Status 01-14	542		13			
	14	Status 01-15	543		14			
15	Status 01-16	544		15				
N7:34	0	Status 02-01	545	10035	0			Other Status Points
	1	Status 02-02	546		1			
	2	Status 02-03	547		2			
	3	Status 02-04	548		3			
	4	Status 02-05	549		4			
	5	Status 02-06	550		5			
	6	Status 02-07	551		6			
	7	Status 02-08	552		7			
	8	Status 02-09	553		8			
	9	Status 02-10	554		9			
	10	Status 02-11	555		10			
	11	Status 02-12	556		11			
	12	Status 02-13	557		12			
	13	Status 02-14	558		13			
	14	Status 02-15	559		14			
15	Status 02-16	560		15				
N7:35	0	Status 03-01	561	10036	0			Other Status Points
	1	Status 03-02	562		1			
	2	Status 03-03	563		2			
	3	Status 03-04	564		3			
	4	Status 03-05	565		4			
	5	Status 03-06	566		5			
	6	Status 03-07	567		6			
	7	Status 03-08	568		7			
	8	Status 03-09	569		8			
	9	Status 03-10	570		9			
	10	Status 03-11	571		10			
	11	Status 03-12	572		11			
	12	Status 03-13	573		12			
	13	Status 03-14	574		13			
	14	Status 03-15	575		14			
15	Status 03-16	576		15				

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:36	0	Status 04-01	577	10037	0			Other Status Points
	1	Status 04-02	578		1			
	2	Status 04-03	579		2			
	3	Status 04-04	580		3			
	4	Status 04-05	581		4			
	5	Status 04-06	582		5			
	6	Status 04-07	583		6			
	7	Status 04-08	584		7			
	8	Status 04-09	585		8			
	9	Status 04-10	586		9			
	10	Status 04-11	587		10			
	11	Status 04-12	588		11			
	12	Status 04-13	589		12			
	13	Status 04-14	590		13			
	14	Status 04-15	591		14			
	15	Status 04-16	592		15			
N7:37	0	Status 05-01	593	10038	0			Other Status Points
	1	Status 05-02	594		1			
	2	Status 05-03	595		2			
	3	Status 05-04	596		3			
	4	Status 05-05	597		4			
	5	Status 05-06	598		5			
	6	Status 05-07	599		6			
	7	Status 05-08	600		7			
	8	Status 05-09	601		8			
	9	Status 05-10	602		9			
	10	Status 05-11	603		10			
	11	Status 05-12	604		11			
	12	Status 05-13	605		12			
	13	Status 05-14	606		13			
	14	Status 05-15	607		14			
	15	Status 05-16	608		15			
N7:38	0	Status 06-01	609	10039	0			Other Status Points
	1	Status 06-02	610		1			
	2	Status 06-03	611		2			
	3	Status 06-04	612		3			
	4	Status 06-05	613		4			
	5	Status 06-06	614		5			
	6	Status 06-07	615		6			
	7	Status 06-08	616		7			
	8	Status 06-09	617		8			
	9	Status 06-10	618		9			
	10	Status 06-11	619		10			
	11	Status 06-12	620		11			
	12	Status 06-13	621		12			
	13	Status 06-14	622		13			
	14	Status 06-15	623		14			
	15	Status 06-16	624		15			
N7:39	0	Status 07-01	625	10040	0			Other Status Points
	1	Status 07-02	626		1			
	2	Status 07-03	627		2			
	3	Status 07-04	628		3			
	4	Status 07-05	629		4			
	5	Status 07-06	630		5			
	6	Status 07-07	631		6			
	7	Status 07-08	632		7			
	8	Status 07-09	633		8			
	9	Status 07-10	634		9			
	10	Status 07-11	635		10			
	11	Status 07-12	636		11			
	12	Status 07-13	637		12			
	13	Status 07-14	638		13			
	14	Status 07-15	639		14			
	15	Status 07-16	640		15			

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	DI	Register	Bit	DI	Valid = X	
N7:40	0	Status 08-01	641	10041	0			Other Status Points
	1	Status 08-02	642		1			
	2	Status 08-03	643		2			
	3	Status 08-04	644		3			
	4	Status 08-05	645		4			
	5	Status 08-06	646		5			
	6	Status 08-07	647		6			
	7	Status 08-08	648		7			
	8	Status 08-09	649		8			
	9	Status 08-10	650		9			
	10	Status 08-11	651		10			
	11	Status 08-12	652		11			
	12	Status 08-13	653		12			
	13	Status 08-14	654		13			
	14	Status 08-15	655		14			
	15	Status 08-16	656		15			

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	AI	Register		AI	Valid = X	
N7:41		FLT1-Start Day	1	30001		1		Filter 1 Data
N7:42		FLT1-ON Time S	2	30002		2		
N7:43		FLT1-OFF Time S	3	30003		3		
N7:44		FLT1-ON Time E	4	30004		4		
N7:45		FLT1-OFF Time E	5	30005		5		
N7:46		FLT1-GAL Set	6	30006		6		
N7:47		FLT1-GAL Elapse	7	30007		7		
N7:48		FLT1-Start Time	8	30008		8		
N7:49		AI9	9	30009				
N7:50		AI10	10	30010				
N7:51		FLT2-Start Day	11	30011		9		Filter 2 Data
N7:52		FLT2-ON Time S	12	30012		10		
N7:53		FLT2-OFF Time S	13	30013		11		
N7:54		FLT2-ON Time E	14	30014		12		
N7:55		FLT2-OFF Time E	15	30015		13		
N7:56		FLT2-GAL Set	16	30016		14		
N7:57		FLT2-GAL Elapse	17	30017		15		
N7:58		FLT2-Start Time	18	30018		16		
N7:59		AI11	19	30019				
N7:60		AI12	20	30020				
N7:61		TK1 GAL	21	30021		17		Tank 1 Gallons Tank 1 Gallons > 32,000 Tank 1 Gallons - Temp Compensate Tank 1 Gallons TC > 32,000 Tank 1 Ullage (Space Available) Tank 1 Ullage > 32,000 Tank 1 % Full
N7:62		32K Plus	22	30022		18		
N7:63		TK1 GAL TC	23	30023		19		
N7:64		32K Plus	24	30024		20		
N7:65		TK1 GAL Ullage	25	30025		21		
N7:66		32K Plus	26	30026		22		
N7:67		TK1 % Full	27	30027		23		
N7:68		AI28	28	30028				
N7:69		AI29	29	30029				
N7:70		AI30	30	30030				
N7:71		TK2 GAL	31	30031		24		Tank 2 Volume Data
N7:72		32K Plus	32	30032		25		
N7:73		TK2 GAL TC	33	30033		26		
N7:74		32K Plus	34	30034		27		
N7:75		TK2 GAL Ullage	35	30035		28		
N7:76		32K Plus	36	30036		29		
N7:77		TK2 % Full	37	30037		30		
N7:78		AI36	38	30038				
N7:79		AI37	39	30039				
N7:80		AI38	40	30040				
N7:81		TK3 GAL	41	30041		31		Tank 3 Volume Data
N7:82		32K Plus	42	30042		32		
N7:83		TK3 GAL TC	42	30043		33		
N7:84		32K Plus	44	30044		34		
N7:85		TK3 GAL Ullage	45	30045		35		
N7:86		32K Plus	46	30046		36		
N7:87		TK3 % Full	47	30047		37		
N7:88		AI48	48	30048				
N7:89		AI49	49	30049				
N7:90		AI50	50	30050				
N7:91		TK4 GAL	51	30051		38		Tank 4 Volume Data
N7:92		32K Plus	52	30052		39		
N7:93		TK4 GAL TC	53	30053		40		
N7:94		32K Plus	54	30054		41		
N7:95		TK4 GAL Ullage	55	30055		42		
N7:96		32K Plus	56	30056		43		
N7:97		TK4 % Full	57	30057		44		
N7:98		AI58	58	30058				
N7:99		AI59	59	30059				
N7:100		AI60	60	30060				

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Earthsafe Internal		BACnet View	BACnet	Modbus	Metasys	Application	Notes
AB-PLC	Bit	Description	AI	Register	AI	Valid = X	
N7:101		VR T1 GAL	61	30061		45	Veeder Root Tank 1 Volume Data
N7:102		32K Plus	62	30062		46	
N7:103		VR T1 GAL TC	63	30063		47	
N7:104		32K Plus	64	30064		48	
N7:105		VR T1 GAL Ullage	65	30065		49	
N7:106		32K Plus	66	30066		50	
N7:107		AI67	67	30067			
N7:108		AI68	68	30068			
N7:109		AI69	69	30069			
N7:110		AI70	70	30070			
N7:111		VR T2 GAL	71	30071		51	Veeder Root Tank 2 Volume Data
N7:112		32K Plus	72	30072		52	
N7:113		VR T2 GAL TC	73	30073		53	
N7:114		32K Plus	74	30074		54	
N7:115		VR T2 GAL Ullage	75	30075		55	
N7:116		32K Plus	76	30076		56	
N7:117		AI77	77	30077			
N7:118		AI78	78	30078			
N7:119		AI79	79	30079			
N7:120		AI80	80	30080			
N7:121		VR T3 GAL	81	30081		57	Veeder Root Tank 3 Volume Data
N7:122		32K Plus	82	30082		58	
N7:123		VR T3 GAL TC	83	30083		59	
N7:124		32K Plus	84	30084		60	
N7:125		VR T3 GAL Ullage	85	30085		61	
N7:126		32K Plus	86	30086		62	
N7:127		AI87	87	30087			
N7:128		AI88	88	30088			
N7:129		AI89	89	30089			
N7:130		AI90	90	30090			
N7:131		VR T4 GAL	91	30091		63	Veeder Root Tank 4 Volume Data
N7:132		32K Plus	92	30092		64	
N7:133		VR T4 GAL TC	93	30093		65	
N7:134		32K Plus	94	30094		66	
N7:135		T4 GAL Ullage	95	30095		67	
N7:136		32K Plus	96	30096		68	
N7:137		AI97	97	30097			
N7:138		AI98	98	30098			
N7:139		AI99	99	30099			
N7:140		AI100	100	30100			

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Earthsafe Internal		BACnet View	BACnet	Modbus		Metasys	Application	Notes
AB-PLC	Bit	Description	AI	Register		AI	Valid = X	
N7:141		Value 01	101	30101		69		Other Analog Data
N7:142		Value 02	102	30102		70		
N7:143		Value 03	103	30103		71		
N7:144		Value 04	104	30104		72		
N7:145		Value 05	105	30105		73		
N7:146		Value 06	106	30106		74		
N7:147		Value 07	107	30107		75		
N7:148		Value 08	108	30108		76		
N7:149		Value 09	109	30109		77		
N7:150		Value 10	110	30110		78		
N7:151		Value 11	111	30111		79		
N7:152		Value 12	112	30112		80		
N7:153		Value 13	113	30113		81		
N7:154		Value 14	114	30114		82		
N7:155		Value 15	115	30115		83		
N7:156		Value 16	116	30116		84		
N7:157		Value 17	117	30117		85		
N7:158		Value 18	118	30118		86		
N7:159		Value 19	119	30119		87		
N7:160		Value 20	120	30120		88		
N7:161		Value 21	121	30121		89		
N7:162		Value 22	122	30122		90		
N7:163		Value 23	123	30123		91		
N7:164		Value 24	124	30124		92		
N7:165		Value 25	125	30125		93		
N7:166		Value 26	126	30126		94		
N7:167		Value 27	127	30127		95		
N7:168		Value 28	128	30128		96		
N7:169		Value 29	129	30129		97		
N7:170		Value 30	130	30130		98		