PCC1301 MODBUS REGISTER MAP

Preliminary

The 1301 genset control contains data that can be read using a remote device communicating with the 1301 via Modbus RTU protocol on a two-wire RS485 master/slave multi-drop bus. In this arrangement the remote device is the master and the 1301 is the slave.

The 1301 is configured to communicate at a baud rate of 19,200, 8 data bits, even parity and 1 stop bit. Default slave address is 1. Parity, baud rate and slave address may be adjusted with InPower.

For more information about the Modbus protocol, refer to Modbus Application Protocol v1.1a and Modbus Serial Line Implementation Guide v1.0, both available at www.modbus.org.

Multi-Drop Network Mode		
PCC1301 Pins		
Hi(+)	Lo (-)	Shield
TB2-3	TB2-4	TB2-1

Register Map

Description	Address	Read/Write	Scale	Units	Type	Notes
Save adjustments	40004	Read and Write			Unsigned integer	0=No action 1=Save adjustments Save adjustments saves to non volital memory all the write parameters listed in this table
Genset control run/off/auto switch position	40010	Read		Switch position	Unsigned integer	0=off 1=Run/Manual 2=Auto
Genset operating state	40011	Read		Operating state	Unsigned integer	0=Stopped 1=Start Pending 2=Warm-up at Idle 3=Running 4=Cool down at Rated 5=Cool down at Idle
Fault Code	40012	Read		Event code	Unsigned integer	This register contains the fault code number of currently active fault. See service manual for list of supported fault codes.
Fault Type	40013	Read		Fault type	Unsigned integer	This register contains the fault type of currently active fault 0=Normal 1=Warning 2=Derate

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Description	Address	Read/ Write	Scale	Units	Type	Notes
						3=Shutdown with Cool down 4=Shutdown
NFPA 110 fault register	40016	Read			bitmap	See NFPA110 bitmap
Extended Annunciation fault register	40017	Read			bitmap	See extended annunciation bitmap
Alternator output voltage line to neutral (a phase)	40018	Read	1.0	AC Volts	Unsigned integer	
Alternator output voltage line to neutral (b phase)	40019	Read	1.0	AC Volts	Unsigned integer	
Alternator output voltage line to neutral (c phase)	40020	Read	1.0	AC Volts	Unsigned integer	
Alternator output voltage line to line (a to b phase)	40022	Read	1.0	AC Volts	Unsigned integer	
Alternator output voltage line to line (b to c phase)	40023	Read	1.0	AC Volts	Unsigned integer	
Alternator output voltage line to line (c to a phase)	40024	Read	1.0	AC Volts	Unsigned integer	
Alternator output voltage (used for voltage regulation)	40025	Read	1.0	AC Volts	Unsigned integer	
Alternator output current (phase a)	40026	Read	0.1	AC Amps	Unsigned integer	
Alternator output current (phase b)	40027	Read	0.1	AC Amps	Unsigned integer	
Alternator output current (phase c)	40028	Read	0.1	AC Amps	Unsigned integer	
Alternator output average current	40029	Read	0.1	AC Amps	Unsigned integer	
Alternator output volt-amperes (phase a)	40040	Read	0.1	kVA	Unsigned integer	
Alternator output volt-amperes (phase b)	40041	Read	0.1	kVA	Unsigned integer	
Alternator output volt-amperes (phase c)	40042	Read	0.1	kVA	Unsigned integer	
Alternator output volt-amperes (total)	40043	Read	0.1	kVA	Unsigned integer	
Alternator frequency	40044	Read	0.1	Hz	Unsigned integer	
Alternator output current (phase a)	40058	Read	0.1	% of nominal	Unsigned integer	
Alternator output current (phase b)	40059	Read	0.1	% of nominal	Unsigned integer	
Alternator output current (phase c)	40060	Read	0.1	% of nominal	Unsigned integer	
Control battery voltage	40061	Read	0.1	DC Volts	Unsigned integer	
Engine oil pressure	40062	Read	1.0	kPa	Unsigned integer	
Engine coolant temperature	40064	Read	0.1	Degrees	Unsigned	

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Description	Address	Read/Write	Scale	Units	Type	Notes
				Celsius	integer	
Engine speed	40068	Read	1.0	RPM	Unsigned integer	
Number of engine starts	40069	Read	1.0	Number of starts	Unsigned integer	
Engine runtime (high byte)	40070	Read	1.0	Sec	Unsigned integer	
Engine Runtime (Low byte)	40071	Read	1.0	Sec	Unsigned integer	
Genset start stop control via Modbus	40300	Read and Write			Unsigned integer	0 – Stop 1- Start
Genset E-stop switch via Modbus	40302	Read and Write			Unsigned integer	0 – Estop not active 1 – Estop active
Nominal alternator voltage setting	43000	Read and Write	1.0	AC Volts	Unsigned integer	
Nominal alternator frequency setting	43001	Read and Write		Hz	Unsigned integer	0 = 60 1 = 50
Alternator phase setting	43002	Read and Write		# of phases	Unsigned integer	0 = 1 1 =3
Alternator connection setting	43003	Read and Write		Alternator connection	Unsigned integer	1=Wye 0= Delta
Glow plug driver feature enable	43004	Read and Write		Feature enabled	Unsigned integer	0 = No 1 = Yes
Battery charging alternator fault enable	43005	Read and Write		Feature enabled	Unsigned integer	0 = No 1 = Yes
Remote start time delay	43006	Read and Write	1.0	Sec	Unsigned integer	
Remote stop time delay	43007	Read and Write	1.0	Sec	Unsigned integer	
Engine starting - cycle crank attempts setting	43008	Read and Write	1.0	Number of attempts	Unsigned integer	
Engine starting - cycle crank time setting	43009	Read and Write	1.0	Sec	Unsigned integer	
Engine starting - cycle crank rest time setting	43010	Read and Write	1.0	Sec	Unsigned integer	
Fault bypass (battle short) feature enable	43011	Read and Write		Feature enabled	Unsigned integer	0 =Inactive 1 = Active
Fault bypass (battle short) switch input assignment	43012	Read and Write		Switch assignment	Unsigned integer	0= None 1=Customer Input 1 2=Customer Input 2 3=Operator Panel
Automatic voltage regulator Enable	43013	Read and Write		Feature enabled	Unsigned integer	0 = No 1 = Yes
Automatic voltage regulator volts per hertz roll off knee setting	43014	Read and Write	0.1	Hz	Unsigned integer	
Automatic voltage regulator volts per hertz roll off slope	43015	Read and Write	0.1	%V/Hz	Unsigned integer	

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Description	Address	Read/ Write	Scale	Units	Type	Notes
setting						
Automatic voltage regulator gain setting	43016	Read and Write	1.0	%	Unsigned integer	
Automatic voltage regulator integral setting	43017	Read and Write	1.0	%	Unsigned integer	
Automatic voltage regulator derivative setting	43018	Read and Write	1.0	%	Unsigned integer	
Electronic governing enable	43019	Read and Write	1.0	Feature enabled	Unsigned integer	0 = No 1 = Yes
Electronic governing initial duty cycle setting	43020	Read and Write	0.1	%	Unsigned integer	
Electronic governing initial duty cycle time	43021	Read and Write	0.1	Sec	Unsigned integer	
Electronic governing start ramp duty cycle setting	43022	Read and Write	0.1	%	Unsigned integer	
Electronic governing maximum duty cycle setting	43023	Read and Write	0.1	%	Unsigned integer	
Electronic governing gain setting	43024	Read and Write	1.0	%	Unsigned integer	
Electronic governing integral setting	43025	Read and Write	1.0	%	Unsigned integer	
Electronic governing derivative setting	43026	Read and Write	1.0	%	Unsigned integer	
Electronic governing crank exit fuel duty cycle setting	43027	Read and Write	0.1	%	Unsigned integer	
Electronic governing dither factor setting	43028	Read and Write	1.0	%	Unsigned integer	
Electronic governing start ramp time setting	43029	Read and Write	0.01	Sec	Unsigned integer	
Electronic governing enable engine speed	43030	Read and Write	1.0	RPM	Unsigned integer	
Electronic governing minimum duty cycle setting	43031	Read and Write	1.0	%	Unsigned integer	
Electronic governing maximum duty cycle setting	43032	Read and Write	1.0	%	Unsigned integer	
Model number character #1	43033	Read and Write			Character	
Model number character #2	43034	Read and Write			Character	
Model number character #3	43035	Read and Write			Character	
Model number character #4	43036	Read and Write			Character	
Model number character #5	43037	Read and Write			Character	
Model number character #6	43038	Read and			Character	

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Description	Address	Read/Write	Scale	Units	Type	Notes
		Write				
Model number character #7	43039	Read and Write			Character	
Model number character #8	43040	Read and Write			Character	
Model number character #9	43041	Read and Write			Character	
Model number character #10	43042	Read and Write			Character	
Model number character #11	43043	Read and Write			Character	
Model number character #12	43044	Read and Write			Character	
Model number character #13	43045	Read and Write			Character	
Model number character #14	43046	Read and Write			Character	
Model number character #15	43047	Read and Write			Character	
Model number character #16	43048	Read and Write			Character	
Serial number character #1	43049	Read and Write			Character	
Serial number character #2	43050	Read and Write			Character	
Serial number character #3	43051	Read and Write			Character	
Serial number character #4	43052	Read and Write			Character	
Serial number character #5	43053	Read and Write			Character	
Serial number character #6	43054	Read and Write			Character	
Serial number character #7	43055	Read and Write			Character	
Serial number character #8	43056	Read and Write			Character	
Serial number character #9	43057	Read and Write			Character	
Serial number character #10	43058	Read and Write			Character	
Serial number character #11	43059	Read and Write			Character	
Serial number character #12	43060	Read and Write			Character	
Serial number character #13	43061	Read and Write			Character	

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Description	Address	Read/Write	Scale	Units	Type	Notes
Serial number character #14	43062	Read and Write			Character	
Serial number character #15	43063	Read and Write			Character	
Serial number character #16	43064	Read and Write			Character	
Configurable input #1 type:	43065	Read and Write		Input type	Unsigned integer	0 = Event 1 = Warning 2 = Shutdown
Configurable input #2 type:	43066	Read and Write		Input type	Unsigned integer	0 = Event 1 = Warning 2 = Shutdown
Configurable output #1 event code number:	43067	Read and Write	1.0	Event code	Unsigned integer	
Configurable output #2 fault event number:	43068	Read and Write	1.0	Event code	Unsigned integer	
60 Hz alternator output voltage adjust %	43069	Read and Write	0.1	%	Unsigned integer	
50 Hz alternator output voltage adjust %	43070	Read and Write	0.1	%	Unsigned integer	
Alternator frequency adjustment %	43071	Read and Write	0.1	%	Integer	
60 Hz line 1 to neutral metering voltage calibration	43072	Read and Write	0.0001	%	Unsigned integer	
60 Hz line 2 to neutral metering voltage calibration	43073	Read and Write	0.0001	%	Unsigned integer	
60 Hz line 3 to neutral metering voltage calibration	43074	Read and Write	0.0001	%	Unsigned integer	
50 Hz line 1 to neutral metering voltage calibration	43075	Read and Write	0.0001	%	Unsigned integer	
50 Hz line 2 to neutral metering voltage calibration	43076	Read and Write	0.0001	%	Unsigned integer	
50 Hz line 3 to neutral metering voltage calibration	43077	Read and Write	0.0001	%	Unsigned integer	
60 Hz line 1 metering current calibration	43078	Read and Write	0.001	%	Unsigned integer	
60 Hz line 2 metering current calibration	43079	Read and Write	0.001	%	Unsigned integer	
60 Hz line 3 metering current calibration	43080	Read and Write	0.001	%	Unsigned integer	
50 Hz line 1 metering current calibration	43081	Read and Write	0.001	%	Unsigned integer	
50 Hz line 2 metering current calibration	43082	Read and Write	0.001	%	Unsigned integer	
50 Hz line 3 metering current calibration	43083	Read and Write	0.001	%	Unsigned integer	
Annunciator configurable	43084	Read and		Input type	Unsigned	0 = Event

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Description	Address	Read/Write	Scale	Units	Type	Notes
input #1 type:		Write			integer	1 = Warning 2 = Shutdown
Annunciator configurable input #2 type:	43085	Read and Write		Input type	Unsigned integer	0 = Event 1 = Warning 2 = Shutdown
Annunciator configurable input #3 type:	43086	Read and Write	.	Input type	Unsigned integer	0 = Event 1 = Warning 2 = Shutdown
Annunciator configurable output #1 event code number:	43087	Read and Write	1.0	Event code	Unsigned integer	
Annunciator configurable output #2 event code number:	43088	Read and Write	1.0	Event code	Unsigned integer	
Annunciator configurable output #3 event code number	43089	Read and Write	1.0	Event code	Unsigned integer	
Annunciator configurable output #4 event code number	43090	Read and Write	1.0	Event code	Unsigned integer	

NFPA110 bitmap (Register 40016)

NFPA 110	
Description	**Bit**
Common Alarm	0 (MSB)
Genset Supplying Load	1
Genset Running	2
Not in Auto	3
High Battery Voltage	4
Low Battery Voltage	5
Charger AC Failure	6
Fail to Start	7
Low Coolant Temperature	8
Pre–High Engine Temperature	9
High Engine Temperature	10
Pre–Low Oil Pressure	11
Low Oil Pressure	12
Overspeed	13
Low Coolant Level	14
Low Fuel Level	15 (LSB)

Extended Annunciation Bitmap (Register 40017)

Description	Bit
Check Genset	0 (MSB)
Ground Fault	1
High AC Voltage	2
Low AC Voltage	3
Under Frequency	4
Overload	5
Overcurrent	6
Short Circuit	7
Reverse KW	8
Reverse KVAR	9
Fail to Sync	10
Fail to Close	11
Load Demand	12
Genset Circuit Breaker Tripped	13
Utility Circuit Breaker Tripped	14
Emergency Stop	15 (LSB)