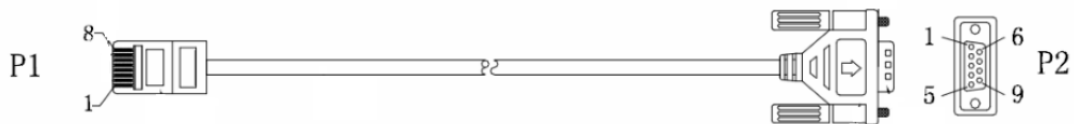


Communication with the Steca Solarix PLI inverter / chargers with MPPT solar charge controller

Warning: before proceeding, make sure the Solarix PLI is safely turned completely off. Also ensure that the cable cover is closed to avoid the risk of touching any components with dangerous voltages. It is not necessary to open the cable cover for the communication.

This document describes how to communicate with the Solarix PLI 5000-48 in order to obtain current data for use in data logging.

Please use the serial communication cable included with the Solarix PLI to connect to the Solarix PLI through an RS-232 port. Should your PC or other device that you wish to connect to not have a native RS-232 port, an RS-232 to serial adaptor that creates a virtual COM port may be used. The pinout of the RS-232 cable is as follows (the left side P1 in the image below must be plugged into the Solarix PLI's RS-232 port, the right side P2 into a PC's or other compatible device's RS-232 port):



The connection between P1 and P2:

P1	Wire colour	P2	Function
1	white and orange	2	TXD
2	blue	3	RXD
8	white and green	5	GND

Once the cable is correctly installed, start up the Solarix PLI to be able to communicate.

Serial communication format

Baud rate	Start bit	Data bits	Parity bit	Stop bit
2400	1	8	N	1

Commands

The following two commands "QPIGS" and "QMOD" allow access to all relevant and current data from the Solarix PLI.

QPIGS: Solarix PLI general status parameters inquiry

Enter the following query from the computer's serial terminal:

QPIGS<CRC><cr>

where QPIGS is the query, <CRC> is the cyclic redundancy check code, and <cr> is a carriage-return. For this query the CRC is equivalent to two characters in hex notation (but sent as bytes): B7A9

The Solarix PLI answers as follows:

(BBB.B CC.C DDD.D EE.E FFFF GGGG HHH III JJ.JJ KKK OOO TTTT EEEE UUU.U WW.WW PPPP
b7b6b5b4b3b2b1b0 QQ VV MMMM b10b9b8<CRC><cr>

The returned CRC value made up of two characters can be ignored. The meanings of each value are explained below (each ASCII value is separated by a space):

	Data	Description	Notes
a	(Start byte	
B	BBB.B	Grid voltage	B is an integer number from 0 to 9. The unit is V.
C	CC.C	Grid frequency	C is an integer number from 0 to 9. The unit is Hz.
D	DDD.D	AC output voltage	D is an integer number from 0 to 9. The unit is V.
E	EE.E	AC output frequency	E is an integer number from 0 to 9. The unit is Hz.
F	FFFF	AC output apparent power	F is an integer number from 0 to 9. The unit is VA.
G	GGGG	AC output active power	G is an integer ranging from 0 to 9. The unit is W.
H	HHH	Output load percent	H is an integer ranging from 0 to 9. The number represents the percent of apparent power. 100% equals 5 kVA. The unit is %.
I	III	Internal bus voltage	I is an integer ranging from 0 to 9. The unit is V.
J	JJ.JJ	Battery voltage as measured by inverter	J is an integer ranging from 0 to 9. The unit is V.
K	KKK	Battery charging current	K is an integer ranging from 0 to 9. The unit is A.
O	OOO	Battery capacity (approximated)	X is an integer ranging from 0 to 9. The unit is %.
T	TTTT	Heat-sink temperature	T is an integer ranging from 0 to 9. The unit is °C.
E	EEEE	PV input current (battery side)	E is an integer ranging from 0 to 9. The unit is A.
U	UUU.U	PV voltage	U is an integer ranging from 0 to 9. The unit is V.
W	WW.WW	Battery voltage as measured by solar charge controller	W is an integer ranging from 0 to 9. The unit is V.
P	PPPP	Battery discharge current	P is an integer ranging from 0 to 9. The unit is A.

Status bits 1	b7b6b5b4 b3b2b1b0	Device status	<p>Each value b_x represents a single status bit with a value of either one or zero.</p> <p>b7: SBU priority status: 1=yes, 0=no b6: <i>reserved</i> b5: <i>reserved</i> b4: Load status: 0=load off, 1=load on b3: <i>reserved</i> b2: Charging status: 1=on, 0=off b1: Solar charging status: 1=on, 0=off b0: AC charging status: 1=on, 0=off</p> <p>b2b1b0: 000 = No charging 110 = Solar charging on 101 = AC charging on 111 = Solar and AC charging on</p>
Q	QQ	<i>reserved</i>	<i>reserved</i>
V	VV	EEPROM version	V is an integer ranging from 0 to 9.
M	MMMM	PV Charging power	M is an integer ranging from 0 to 9. The unit is W.
Status bits 2	b10b9b8	Device status	<p>b10: flag for charging to floating mode b9: switched on b8: <i>reserved</i></p>

QMOD: Solarix PLI mode inquiry

Enter the following query from the computer's serial terminal:

QMOD<CRC><cr>

where QMOD is the query, <CRC> is the cyclic redundancy check code, and <cr> is a carriage-return. For this query the CRC is equivalent to two characters in hex notation (but sent as bytes): 49C1

The Solarix PLI answers as follows:

(M<CR><cr>

The returned CRC value made up of two characters can be ignored. As in QPIGS, the response begins with a (character, which is the starting byte. The possible meanings of M are explained below:

CODE (M)	NOTES
P	Power on mode
S	Stand-by mode
L	Line mode (by-pass relay closed)
B	Battery mode
F	Fault mode
H	Power saving mode