

**Programming example for the function manager of PSI 9000**  
**(Objects 54, 56, 74, 75, 78, 90 – 146)**

Step	Object in dec. (hex.)	Command (without start delimiter, device node and checksum)
1. Set remote mode	54 ( 0x36 )	0x36 / 0x10 / 0x10
2. Enable function manager programming mode	90 ( 0x5A )	0x5A / 0x01 / 0x01
3. Send function sequence data (here sequence point 1/1)	97 ( 0x61 )	0x61 <sup>1</sup> / 0x00* / 0x0A / 0x64 <sup>2</sup> / 0x00 / 0x32 <sup>3</sup> / 0x00 means: 20ms, 100% voltage, 50% current
4. Configure function layout	91 ( 0x5B )	0x5B / 0x02 / 0x01 / 0x02 / 0x00 / 0x00 / 0x14 <sup>4</sup>
5. Configure 1st sequence	92 ( 0x5C )	0x5C / 0x64 / 0x00 / 0x00 / 0x00 / 0x00 / 0x01 <sup>5</sup>
6. Configure 2nd sequence	93 ( 0x5D )	0x5D / 0x64 / 0x00 / 0x00 / 0x00 / 0x00 / 0x01 <sup>5</sup>
7. Save function data (optional)	90 ( 0x5A )	0x5A / 0x04 / 0x04
8. Disable function manager programming mode	90 ( 0x5A )	0x5A / 0x01 / 0x00
9. Switch to function manager mode	54 ( 0x36 )	0x36 / 0x40 / 0x40

Following steps can then be performed as desired:

10. Run/continue function manager ( RUN + GO ) or Execute a single step (STEP)	56 ( 0x38 )	0x38 / 0x0F / 0x08  0x38 / 0x0F / 0x02
11. Stop function manager (STOP)	56 ( 0x38 )	0x38 / 0x0F / 0x04
12. Reset function manager to starting point (NEW)	56 ( 0x38 )	0x38 / 0x0F / 0x01
13. Exit function manager	54 ( 0x36 )	0x36 / 0x40 / 0x00

While the function manager is running, you can use these objects to:

Query the status of the function manager control	74 ( 0x4A )	0x4A
Query the status of the running sequence	75 ( 0x4B )	0x4B
Query elapsed time	78 ( 0x4E )	0x4E

Note: saving the function data is optional (step 6), but you should consider that the data is lost if not saved and the device is switched off or experiences a mains blackout.

**\*Description of the time ranges (for sequence data):**

Step in s	Range	Values
0,002	0s ... 9,998s	0x0001 ... 0x1387
0,010	10s ... 59,99s	0x43E8 ... 0x576F
1,000	60s ... 59min 59s	0x803C ... 0x8E10
60,000	60min ... 99h 59min	0xC03C ... 0xD76F

Example: 0x00 0x0A = 0x000A -> A=10; 10\* 2ms= 20ms

<sup>1</sup> 1st sequence point of the 1st sequence

<sup>2</sup> 0x6400 = 100%; see user instruction guide of interface card for calculation, section 7.6.1

**Programming example for the function manager of PSI 8000**  
**(Objects 54, 56, 74, 75, 78, 90 – 146)**

Step	Object in dec. (hex.)	Command (without start delimiter, device node and checksum)
1. Set remote mode	54 ( 0x36 )	0x36 / 0x10 / 0x10
2. Send function sequence data (here sequence point 1/1)	97 ( 0x61 )	0x61 <sup>11</sup> / 0x64 <sup>22</sup> / 0x00 / 0x32 <sup>33</sup> / 0x00 / 0x00 <sup>4</sup> / 0x0A here: 20ms, 100% voltage, 50% current
3. Configure function layout	91 ( 0x5B )	0x5B / 0x12 / 0x02 / 0x00 / 0x00 / 0x00 / 0x14 <sup>4</sup>
4. Configure 1st sequence	92 ( 0x5C )	0x5C / 0x64 / 0x00 / 0x00 / 0x00 / 0x00 / 0x01 <sup>5</sup>
5. Configure 2nd sequence	93 ( 0x5D )	0x5D / 0x64 / 0x00 / 0x00 / 0x00 / 0x00 / 0x01 <sup>5</sup>
6. Save function data (optional)	90 ( 0x5A )	0x5A / 0x02 / 0x02
7. Activate function manager	54 ( 0x36 )	0x36 / 0x40 / 0x40
Following steps can then be performed as desired:		
8. Run/continue function manager ( RUN + GO ) or Execute a single step (STEP)	56 ( 0x38 )	0x38 / 0x0F / 0x08  0x38 / 0x0F / 0x02
9. Stop function manager (STOP)	56 ( 0x38 )	0x38 / 0x0F / 0x04
10. Reset function manager to starting point (NEW)	56 ( 0x38 )	0x38 / 0x0F / 0x01
11. Exit function manager	54 ( 0x36 )	0x36 / 0x40 / 0x00
While the function manager is running, you can use these objects to:		
Query the status of the function manager control	74 ( 0x4A )	0x4A
Query the status of the running sequence	75 ( 0x4B )	0x4B
Query elapsed time	78 ( 0x4E )	0x4E

Note: saving the function data is optional (step 6), but you should consider that the data is lost if not saved and the device is switched off or experiences a mains blackout.

**\*Description of the time ranges (for sequence data):**

Step in s	Range	Values
0,002	0s ... 9,998s	0x0001 ... 0x1387
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1,000	60s ... 59min 59s	0x803C ... 0x8E10
60,000	60min ... 99h 59min	0xC03C ... 0xD76F

Example: 0x00 0x0A = 0x000A -> A=10; 10\* 2ms= 20ms

<sup>1</sup> 1st sequence point of the 1st sequence

<sup>2</sup> 0x6400 = 100%; see user instruction guide of interface card for calculation, section 7.6.1

<sup>3</sup> 0x3200 = 50%; see user instruction guide of interface card for calculation, section 7.6.1

<sup>4</sup> Example function 2-1-2 with 20 repetitions, a 0 for the sequence number means that it is unused

<sup>5</sup> Example sequence 1+2: 100% power, resistance is 0 because unused, repeat 1x