

Allen-Bradley CSP/PCCC communication protocol (Client Server Protocol / Programmable Controller Communication Command)

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Supported device types and versions

The Allen-Bradley CSP/PCCC protocol supports communication with the Allen-Bradley devices of the SLC-500 series using a TCP connection. It also supports communication via the DF1 gateway with SLCs that communicate via DH+ or DH485. Communication was tested e.g. with the following SLC:

- SLC 5/05 1747-L551/C Ethernet Processor
- SLC 5/05 1747-L552/C Ethernet Processor
- SLC 5/05 1747-L553/C Ethernet Processor

Note: PCCC message encapsulation is also supported within the [Ethernet/IP Protocol](#) (communication with MicroLogix 1100 or SLC 5/05 1747-L553/C Ethernet Processor)

Communication line configuration

- Communication line category: [TCP/IP-TCP](#).
- The default TCP port for the Allen-Bradley CSP/PCCC protocol is 2222.

Station configuration

- Communication protocol: "Allen-Bradley CSP/PCCC".
- The station address is not configured.

Station protocol parameters

Dialog window [station configuration](#) - tab "Protocol parameters".

They influence some optional protocol parameters. The following station protocol parameters can be entered:

Parameter	Description	Unit	Default Value
Response Wait Timeout	Timeout to receive a response from PLC.	s	1.000
Retry Count	The number of the request retries in case of a communication failure.	-	3
Destination Node Address	If using a DF1 gateway, the node address of the destination device (node) on a DH+ or DH485 bus. If the DF1 gateway is not in use, the default value of 0 must be used.	-	0
Block Read	Activates the block reading mode (for <i>Integer</i> , <i>Binary</i> , <i>Status</i> , <i>Float</i> , <i>Timer</i> , and <i>Counter</i> types). <i>Input</i> and <i>Output</i> types don't support block reading mode.	YES /NO	NO
Max. Block Length	Maximum block size (2-255 bytes) if a block reading mode is active.	bytes	40
Full Debug	Activates detailed listings about sending and receiving values.	-	False

I/O tag configuration

Possible I/O tags: **Ai, Ao, Ci, Co, Di, Dout**.

The address of the I/O tag is text in an SLC-500 format. The address format is:

[$\$$] X [file] : element [.field] [/bit]

Explanatory notes:

\$	- optional character
X	- file identifier (required - see Table 2)

file	- file number (optional, if it is empty, the default file number is used - see Table 2)
element	- element number in the file (required)
.field	- number of sub-element (optional, it is used only for Output, Input files)
/bit	- bit number (optional, it must be in the range of 0..15)

Table 2

X	File Type	Default file number (file)
O	Output	0
I	Input	1
S	Status	2
B	Binary	3
T	Timer	4
C	Counter	5
N	Integer	7
F	Float	8

File type - Output

```
[ $\$$ ]O[n]:e[.s][ /b]
```

"n" - the file number, if it is different from the default number 0,

"e" - the number of an element in a file,

"s" - the number of a sub-element (0..255),

"b" - the bit number (0..15).

Example:

```
O:2
 $\$$ O0:2/0
O:1.0/1
```

Note: The files of the Output type are read-only.

File type - Input

```
[ $\$$ ]I[n]:e[.s][ /b]
```

"n" - the file number, if it is different from the default number 1,

"e" - the number of an element in file,

"s" - the number of a sub-element (0..255),

"b" - the bit number (0..15).

Example:

```
I:1
 $\$$ I1:2/0
I:2.0/15
```

Note: The files of Input type are read-only.

File type - Status

```
[ $\$$ ]S[n]:e[ /b]
```

"n" - the file number, if it is different from the default number 2,

"e" - the number of an element in file,

"b" - the bit number (0..15).

Example:

```
S:0
$S2:40
S:2/15
```

Note: As for the files of Status type, data can not be written bit-by-bit (input tags with the parameter [/b]).

File type Binary

```
[ $ ]B[n]:e[/b]
```

"n" - the file number, if it is different from the default number 3,
"e" - the number of an element in file,
"b" - the bit number (0..15).

Example:

```
B:2
$B3:0
B3:2/1
```

File type - Timer

```
[ $ ]T[n]:e[/b]
```

"n" - the file number, if it is different from the default number 4,
"e" - the number of an element in file,
"b" - an optional prefix /EN, /TT, /DN (bit values) or /PRE, /ACC (integer values).

Example:

```
T:2
$T4:0/ACC
```

File type - Counter

```
[ $ ]C[n]:e[/b]
```

"n" - the file number, if it is different from the default number 5,
"e" - the number of an element in file,
"b" - an optional prefix /DN, /CU, /CD, /OV, /UN, /UA (bit values) or /PRE, /ACC (integer values).

Example:

```
C:17
$C5:34/DN
```

File type - Integer

```
[ $ ]N[n]:e[/b]
```

"n" - the file number, if it is different from the default number 7,
"e" - the number of an element in file,
"b" - the bit number (0..15).

Example:

```
N7:2
$N:0
N27:0/1
```

File type - Float

```
[ $ ]F[n]:e
```

"n" - the file number, if it is different from the default number 8,
"e" - the number of an element in file.

Example:

F:0
\$F8:0
F29:1

Document revisions

- Ver. 1.0 - July 12th, 2017 - Document creation.



Related pages:

[Communication protocols](#)