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S7-200 and HMI components

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QUESTION:
Which HMI components can I connect to the S7-200 and what should I watch out for?

ANSWER:
You can connect various HMI components to an S7-200, but the how many depends on the connection protocol chosen.

Below is an overview of the HMI components that can be connected to the S7-200. Table 1 has the column "Number of S7-200s" indicating the maximum number of S7-200 controllers you can parameterize in Pro Tool. The TD 200 is parameterized with the wizard in STEP 7-Micro/WIN.

HMI components	Number of S7-200s PPI protocol	Number of S7-200s MPI protocol (DP/T)
PP 7	-	1 (max. 1.5 Mbaud)
PP 17-1	-	1 (max. 1.5 Mbaud)
PP 17-2	-	1 (max. 1.5 Mbaud)
TD 17	4	4
OP 3	2	-
OP 5	4	-
OP 7	4	4
OP 15	4	-
OP 17	4	4
OP 25	4	4 (max. 1.5 Mbaud)
OP 27	4	4
OP 35	6	6 (max. 1.5 Mbaud)
OP 37	8	8
TP 27-6	4	4
TP 27-10	4	4
TP 37	8	8
TP 070	-	1 (max. 19.2 Kbaud)
TP 170A	1 (1)	1 (max. 1.5 Mbaud)
TP 170B	1 (1)	4
OP170B	1 (1)	4
Mobile Panel 170	1 (1)	4
MP 270	1 (1)	8
MP 270B/ OP270/ TP270	1 (1)	8
MP 370	1 (1)	8
MP 370 12"/15" Touch	1 (1)	8
PC 670/ 870	1	8
FI 25	1	8 (max. 1.5 Mbaud)

FI 45	1	8
OP 37 Pro	1	8
PCs	1	8
TD 200 (2)	1	1 (max. 187.5 Kbaud)

Table 1: Maximum number of S7-200s on HMI components

(1) Requirement is the use of ProTool V 6.0

(2) TD 200 sets automatically to the protocol used

The number of Ops that can be connected to an S7-200 is limited and depends on the type of CPU and the connection protocol used.

Note:
Only one TP 070 and no other users may be connected to each CPU interface!

The following table is valid for the MPI protocol (DP/T):

MPI (DP/T)	**Number of HMI components CPU port 0**	**Max. baud rate CPU port 0**	**Number of HMI components CPU port 1**	**Max. baud rate CPU port 1**	**Number of HMI components EM 277 Port**
CPU 212 (from FW 1.1)	3	19.2 Kbaud	-	-	-
CPU 214 (from FW 1.1)	3	19.2 Kbaud	-	-	-
CPU 215	3	19.2 Kbaud	5	12 Mbaud	-
CPU 216	3	19.2 Kbaud	3	19.2 Kbaud	-
CPU 221	3	187.5 Kbaud	-	-	-
CPU 222	3	187.5 Kbaud	-	-	-
CPU 224	3	187.5 Kbaud	-	-	-
CPU 226	3	187.5 Kbaud	3	187.5 Kbaud	-
EM 277	-	-	-	-	5 / max.12 Mbaud

Table 2: Maximum number of HMI components on the S7-200

If several PPI masters access a PPI slave, then you have to slow down the update time of the masters. Otherwise it might happen that a second master constantly tries to access the busy slave. So when using multiple HMI devices, please set the base clock higher (with TD 200 this update rate is in the TD 200 wizard).

As far as possible, use the MPI protocol or "Advanced PPI". More information on the communications protocols of S7-200 is available in the "System Manual S7-200 Edition 04/2002", chapter 7 Communication, in turn available in the network in Entry ID 1109582.

Note:
An MPI master is not allowed to access a PPI master in the same network!