

There are inconsistencies between the Pelco D protocol and the VT protocol. Three areas of inconsistency had to be addressed. The VT protocol has many extra commands not implemented in the Pelco D protocol. The VT variable speed protocol makes use of 255 speeds for pan tilt operation while the Pelco D protocol uses only 64. Finally, the VT variable speed protocol uses speeds with lens commands, while the Pelco D protocol uses a command to set the speed for lens functions, but has no variable speed control of lenses. This document describes how these inconsistencies have been overcome in the CM6700-VT firmware.

VT EXTRA COMMANDS:

The extra VT protocol commands have been made available through the use of high numbered presets. Since Pelco receivers use presets in the 90-99 range for some special functions, preset 89 was chosen as the highest number preset for VT special functions. VT special functions are performed by calling presets 65 through 89, and the use of the numeric, hold, F4, and F5 keys.

CommandExecution ProcedureProtocol Pump OffCall Preset 65X mmh nnh P 00h 00hPump On Call Preset 66X mmh nnh P 01h 00hWiper / Washer OffCall Preset 67X mmh nnh W 00h 00hWiper / Washer OnCall Preset 68X mmh nnh W 01h 00hWiper Washer TimeCall Preset 69X mmh nnh S ddh 00hStart Wiper CycleCall Preset 70X mmh nnh S 00hIllumination OffCall Preset 71X mmh nnh L 00h 00hIllumination OnCall Preset 72X mmh nnh L 01h 00hCamera OffCall Preset 73X mmh nnh C 00h 00hCamera OnCall Preset 74X mmh nnh C 01h 00hFlipCall Preset 75P mmh nnh f 00hRecall Park PositionCall Preset 76P mmh nnh H 00hPark mode delayCall Preset 77P mmh nnh h ddh 00hTurn off park modeCall Preset 78P mmh nnh y 00hActivate park modeCall Preset 79P mmh nnh h 00hInitializationCall Preset 80P mmh nnh l 00hRemove preset from patrol modeCall Preset 81P mmh nnh B pph 00hInclude preset in patrol modeCall Preset 82P mmh nnh l pph 00hPatrol delay timeCall Preset 83P mmh nnh t ddh 00hPatrol mode stop presetCall Preset 84P mmh nnh e pph 00hPatrol mode start presetCall Preset 85P mmh nnh d pph 00hStop patrol modeCall Preset 86P mmh nnh x 00hActivate patrol mode (AW telemetry)Call Preset 87P mmh nnh t 00hActivate patrol mode (Simatrix)Call Preset 88P mmh nnh u 00hPreset recalling speedCall Preset 89P mmh nnh v ssh 00hSet auto pan durationCall Preset 95P mmh nnh P ddh 00hAuto pan offCall Preset 96P mmh nnh b 00hAuto pan onCall Preset 97P mmh nnh a 00h**Relay CommandsCommandExecution ProcedureProtocol** Relay 1 active1 F4P mmh nnh A 11h 00hRelay 2 active2 F4P mmh nnh A 21h 00hRelay 3 active3 F4P mmh nnh A 31h 00hRelay 4 active4 F4P mmh nnh A 41h 00hRelay 5 active5 F4P mmh nnh A 51h 00hRelay 6 active6 F4P mmh nnh A 61h 00hRelay 7 active7 F4P mmh nnh A 71h 00hRelay 8 active8 F4P mmh nnh A 81h 00hRelay 1 inactive1 F5P mmh nnh A 10h 00hRelay 2 inactive2 F5P mmh nnh A 20h 00hRelay 3 inactive3 F5P mmh nnh A 30h 00hRelay 4 inactive4 F5P mmh nnh A 40h 00hRelay 5 inactive5 F5P mmh nnh A 50h 00hRelay 6 inactive6 F5P mmh nnh A 60h 00hRelay 7 inactive7 F5P mmh nnh A 70h 00hRelay 8 inactive8 F5P mmh nnh A 80h 00hRelay 1 active Relay 2 inactive94 F4P mmh nnh A A2h 00hRelay 2 inactive Relay 2 active95 F4P mmh nnh A A3h 00hAuxiliary F0 On96 F4X mmh nnh X 01h 00hAuxiliary F0 Off96 F5X mmh nnh X 00h 00hAuxiliary F1 On97 F4X mmh nnh Y 01h 00hAuxiliary F1 Off97 F5X mmh nnh Y 00h 00hRelays 1 and 2 On98 F4P mmh nnh A1h 00h Relays 1 and 2 Off98 F5P mmh nnh A0h 00h All Relays On99 F4P mmh nnh F1h 00hAll Relays Off99 F5P mmh nnh F0h 00hThe dd, pp, and ss

abbreviations stand for delay or duration, preset, and speed respectively. All delays or durations range from 01h to ffh (1 to 255 decimal) seconds. The preset number for the remove preset from patrol mode, and the include preset in patrol mode commands (AW Telemetry System) ranges from 01h to 08h (1 to 8 decimal). The preset number in the patrol mode stop preset, and the patrol mode start preset commands range from 01h to 40h (1 to 64 decimal). The speed in the preset recalling speed command ranges from 01h to ffh (1 to 255 decimal). Any command byte ending with h is a hexadecimal representation.

Many of these commands make use of a data value. In order to implement these commands, entering the value followed by pressing the hold key is used. For example, to set the patrol delay time to twenty five seconds, press the clear key, press the 2 key, press the 5 key, press the hold key, press the 8 key, press the three key, finally press the preset key. Release the preset key before two seconds in order to cause the patrol delay command to be sent.

VT Variable Speed Pan Tilt Commands:

VT Speed commands now match the speed table sent by Mr. Seifert.

Pelco KBD300 CodeVT-Speed-CodeVT-Tilt-

Speed°/sec1710.202820.513930.8241041.1151151.4161261.6971371.9881482.2591592.521016
102.791117113.051218123.301319133.551420143.801521154.041622164.281723174.5118241
84.741925194.962026205.182127225.602228246.012329266.402430286.782531307.14263232
7.492733347.822834368.142935388.453036408.753137429.043238449.313339469.583440489.
8335415010.0836425310.4337435610.7638445911.0739456211.3640466511.6441476911.9842
487312.3043497712.5944508112.8745518513.1246528913.3547539313.5748549713.76495510
113.95505610514.12515711014.31525811514.49535912514.79546013815.11556115415.40566
217815.70576322416.00

VT Variable Speed Lens Commands:

The VT protocol allows for variable lens functions. No such functionality exists in the Pelco protocol. The Pelco protocol does allow lens speeds to be changed via command. In order to allow a similar lens speed change, a value is entered followed by pressing the far key, close key, or wide key (twisting the joystick knob counter clockwise for the KBD300). For example, to change the focus speed to thirty, press the clear key, press the 3 key, press the 0 key, press the far key. The VT focus speed will now be thirty when the far key is used. (Note: The Pelco protocol has only 4 speeds each for zoom and focus there is no way to change the speed of the iris. The VT protocol allows 255 different speeds for zoom focus and iris. Using the method previously described, any of the 255 speeds may be used.)

Making the CM6700 perform the VT protocol cleanly is difficult. There are many inconsistencies between the protocols, and there are a limited number of keys on the CM6700 keyboards. This implementation of the VT protocol on the CM6700 solves most of the problems. VT variable speed pan tilt and lens commands are only sent when 485 VT VARIED is selected for the camera in the camera menu. All cameras default to 485 VT FIXED on system reset.