

Interface Protocol

HD12xCT3
HR12PCT2
OHI122Cxx03
YM22PCT2

HM24PCT2
HW12PCT3
OHII102Cxx03
YR24PCT2

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1. Sensor List

The following sensors are described in this data sheet:

- HD12xCT3
- HM24PCT2
- HR12PCT2
- HW12PCT3
- OHI122Cxx03
- OHI102Cxx03
- YM22PCT2
- YR24PCT2

2. Serial interface

The sensors can be addressed by means of the V24 protocol. The teach-in input serves as an RxD line and the switching output is used as a TxD line.

The interface must be set to 9600 baud, N, 8, 1.

2.1 TxD Line

The switching output is implemented as a positive switching output to +Uop (PNP version). The A232 Adapter Box must be interconnected for direct connection to the PC. The adapter box is unnecessary in the event of direct connection to a PLC input.

2.2 RxD Line

The teach-in input (pin 2) serves as an RxD line.

Detection of logic 1 at input Pin2: UPin2 = +8 V ... Uop

Detection of logic 0 at input Pin2: UPin2 = 0 V ... 3 V

2.3 Transmission Format

A pause of greater than 300 ms must be included between all transmitted characters.

All characters are transmitted in ASCII format.

All data values are transmitted as ASCII characters in hexadecimal format.

2.4 Checksum Calculation

The checksum is generated via an EXOR link to the frame, beginning with the start byte and ending with the last character of the user data.

Example:

/	2Fh	=	0010 1111	
0	30h	=	0011 0000	
	XOR	=	0001 1111	
2	32h	=	0011 0010	
	XOR	=	0010 1101	
0	30h	=	0011 0000	
	XOR	=	0001 1101	
D	44h	=	0100 0100	
	XOR	=	0101 1001	
0	30h	=	0011 0000	
	XOR	=	0111 1001	
0	30h	=	0011 0000	
	XOR	=	0101 1001	→ checksum = 59h

2.5 Commands

2.5.1 Teach-In

Query: /02 0T MM CC. MM=Mode 0x00=NO HG 0x01=NO VG 0x02=NC HG 0x03=NC VG 0x10=potentiometer -1 0x11=potentiometer +1 0x12=potentiometer -16 0x13=potentiometer +16 CC=checksum	Response: /07 0M T PP MM VVVV CC. PP=PotMax 1=potentiometer full 0=potentiometer not full MM=mode VVVV=potentiometer value (absolute value, CalibMin value) CC=checksum
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2.5.2 Execute Sensor Reset

Query: /000R4D.	Response: /02 0R OK CC. CC = checksum
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2.6 Process

2.6.1 Read Out Distance Value

Query: /000D5B.	Response: /0C 0D VVVV SSSS XX YY CC. VVVV = value (value = absolute value - CalibMin value) SSSS = threshold (threshold = absolute value - CalibMin value) XX = output state YY = PotMax 1=upper or lower threshold at limit stop
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2.7 Settings

2.7.1 Adjust On and Off-Delay

Query: /04 0A AA BB CC. AA = on-delay BB = off-delay TT=time in 5 ms	Response: /01 0M A CC. CC = checksum
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2.7.2 Read Out Sensor Configuration

Query: /000g78.	Response: /1C 0g SSSS MM NN OO PP RR SSSS TTTTTTTT FF CC. SSSS = relative threshold MM = polarity NN = mode OO = on-delay PP = off-delay RR = language SSSS = standard range TTTTTTTT = unit (string) FF = for internal use (valid checksum) CC = checksum
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2.7.3 Change Sensor Configuration

Query: Version 1 /14 0G SSSS MM NN OO PP RR SSSS FF CC. As of version 2: /1C 0G SSSS MM NN OO PP RR SSSS TTTT TTTT FF CC. SSSS = threshold min: 0, max: standard range (1000) MM = polarity 0=NO 1=NC NN = teach-in mode 0=HG 1=VG OO = on-delay [x 5ms] min: 0, max: 200 PP = off-delay [ms] min: 0, max: 200 RR = language 0: German, 1: English SSSS = standard range (default 1000) TTTT TTTT = unit Example “44494700” = “DIG” FF = don’t care (insert “00”); CC = checksum	Response: /01 0M G CC. CC = checksum
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2.7.4 Set Switching Point

Query: /04 0S SSSS CC. SSSS = threshold (threshold = absolute value - CalibMin value) CC = checksum	Response: /01 0M S CC. CC = checksum
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2.7.5 Read Out Sensor Version

Query: /000V49.	Response: /07 0V 8A: GG TT CC. A = software version GG = sensor group VV = sensor type CC = checksum
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2.7.6 Read Out Sensor ID

Query: /000v69.	Response: /24 0v SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS AA BB DD CC. AA = software version BB = sensor group DD = sensor type CC = checksum
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