HART COMMAND TABLE for FCX-AII/CII

1. Universal Commands

CMD#	Function	DATA in Command (Master to Slave)	(TYPE)	DATA in Reply (Slave to Master)	(TYPE)	Apply for AII/CII	275+FCX-AII/CII 275 GENERIC MODE	275 FCX-AII MODE
0	Read unique identifier	none		Byte0 "254"(expansion) Byte1 manufacturer identification code Byte2 mfr's device type code Byte3 number of preambles Byte4 universal command revision Byte5 transmitter-specific cmd revision Byte6 software revision Byte7 hardware revision Byte8 device function flags Byte9-11 device ID number (H,M,L)	(H) (B)	Yes	Yes	Yes
1	Read primary variable	none		Byte0 PV units code Byte1-4 primary variable (+0,1,2,3)	(F)	Yes	Yes	Yes
2	Read current and percent of range	none		Byte0-3 current[mA] (+0,1,2,3) Byte4-7 percent of range (+0,1,2,3)	(F) (F)	Yes	-	Yes
3	Read current and all (predefined) dynamic variables	none		Byte0-3 current[mA] (+0,1,2,3) Byte4 PV units code Byte5-8 primary variable (+0,1,2,3) Byte9 SV units code Byte10-13 secondary variable (+0,1,2,3)	(F) (F)	Yes	Yes	Yes
6	Write polling addr.	Byte0 polling address		as in command		Yes	Yes	Yes
11	Read unique ident. associated with tag	Byte0-5 tag (Top・・・・End)	(A)	as command 0		Yes	Yes	Yes
12	Read message	none		Byte0-23 message (Top・・・・End)	(A)	Yes	Yes	Yes
13	Read tag,descriptor, date	none		Byte0-5 tag (Top・・・・End) Byte6-17 descriptor (Top ・・・・End) Byte18-20 date	(A) (A) (D)	Yes	Yes	Yes
14	Read PV sensor information	none		Byte0-2 sensor serial number (H,M,L) Byte3 unit code for sensor limits and min span Byte4-7 upper sensor limit (+0,1,2,3) Byte8-11 lower sensor limit (+0,1,2,3) Byte12-15 minimum span (+0,1,2,3)	(F) (F) (F)	Yes	Yes	Yes
15	Read output information	none		Byte0 alarm select code Byte1 transfer function code Byte2 PV/range units code Byte3-6 upper range value (+0,1,2,3) Byte7-10 lower range value (+0,1,2,3) Byte11-14 damping value[sec] (+0,1,2,3) Byte15 write-protect code Byte16 private-label distributor code	(F) (F) (F)	Yes	Yes	Yes
16	Read final assembly number	none		Byte0-2 final assembly number (H,M,L)		Yes	Yes	Yes
17	Write message	Byte0-23 message (Top・・・・End)	(A)	as in command		Yes	Yes	Yes
18	Write tag,descriptor ,date	Byte0-5 tag (Top ・・・・ End) Byte6-17 descriptor(Top・・End) Byte18-20 date	(A) (A) (D)	as in command		Yes	Yes	Yes
19	Write final assembly number	Byte0-2 final assembly number (H,M,L)		as in command		Yes	Yes	No

2. Common-Practice Commands

34	Write damping value	Byte0-3 damping value[sec](+0,1,2,3)	(F)	as in command		Yes	Yes	Yes
35	Write range values	Byte0 range units code Byte1-4 upper range value (+0,1,2,3) Byte5-8 lower range value (+0,1,2,3)	(F) (F)	as in command		Yes	Yes	Yes
36	Set upper range value	none		none		Yes	Yes	Yes
37	Set lower range value	none		none		Yes	Yes	Yes
38	Reset "configuration changed" flag	none		none		Yes	Yes	Yes
40	Enter/exit fixed current mode	Byte0-3 current [mA] (+0,1,2,3) (0=exit the mode)	(F)	as in command		Yes	Yes	Yes
41	Perform transmitter self test	none		none		Yes	Yes	Yes
43	Set PV zero	none		none		Yes	No	Yes
44	Write PV units	Byte0 PV units code		as in command		Yes	Yes	Yes
45	Trim DAC zero	Byte0-3 measured current[mA](+0,1,2,3)	(F)	as in command		Yes	Yes	Yes
46	Trim DAC gain	Byte0-3 measured current[mA](+0,1,2,3)	(F)	as in command		Yes	Yes	Yes
47	Write transfer function	Byte0 transfer function code		as in command		Yes	No	Yes
48	Read additional transmitter status	none		Byte0-3 additional status (+0,1,2,3)		Yes	No	Yes
108	Write burst mode command number	Byte0 burst mode command number		as in command		Yes	Yes	Yes
109	Burst mode control	Byte0 burst mode control code (0=exit,1=enter)		as in command		Yes	Yes	Yes
110	Read all dynamic variables	none		Byte0 PV units code Byte1-4 PV value (+0,1,2,3) Byte5 SV units code Byte6-9 SV value (+0,1,2,3)	(F) (F)	Yes	No	Yes

3. Device-Specific Commands

128	Read Static Data Materials	none	Byte0 Flange Type Byte1 Flange Material Byte2 O-ring/Gasket material Byte3 Meter Option Byte4 Drain/Vent Material Byte5 Remote Seal Type Byte6 Remote Seal Fill Fluid Code Byte7 Remote Seal Isolator Materia Byte8 Number of Remote Seals Byte9 Module Fill Fluid Byte10 Module Isolator Materia Byte11 Module Type Code Byte12 Range Code Byte13 Sensor Trim Point Units Byte14-17 Upper Sensor Trim Point(+0,1,2,3 (F) Byte18-21 Lower Sensor Trim Point(+0,1,2,3 (F) Byte22 (not used) Byte23 Local Keys Control	Yes	No	Yes
129	Write Static Data Materials	Byte0 Flange Type Byte1 Flange Material Byte2 O-ring/Gasket material Byte3 Meter Option Byte4 Drain/Vent Material Byte5 Remote Seal Type Byte6 Remote Seal Fill Fluid Code Byte7 Remote Seal Isolator Materia Byte8 Number of Remote Seals	as in command	Yes	No	Yes
130	Write upper sensor trim point	Byte0 Upper Sensor Trim Point Unit Byte1-4 Upper Sensor Trim Point(+0,1,2,3) (F)	as in command	Yes	No	Yes
131	Write lower sensor trim point	Byte0 Lower Sensor Trim Point Unit Byte1-4 Lower Sensor Trim Point(+0,1,2,3) (F)	as in command	Yes	No	Yes
132	Write local keys mode control	Byte0 Local Keys Mode Control Mode	as in command	Yes	No	Yes
144	Read Model Code (Pilc)	none	Byte0-11 Model Code <Pilc> (Top・・・・End) (A)	Yes	No	Yes
145	Read Comment 1(Tag	none	Byte0-11 Comment 1<Tag2> (Top・・・End) (A)	Yes	No	No
146	Read Comment 2	none	Byte0-11 Comment 2 (Top・・・・End) (A)	Yes	No	No
147	Read Cell Body-No.	none	Byte0-5 Cell Body-No. (Top・・・・End) (A)	Yes	No	Yes
150	Read Cut Point	none	Byte0-3 Cut Point[%] (+0,1,2,3) (F)	Yes	No	Yes
152	Write Model Code	Byte0-11 Model Code<Pilc>(Top・・・End) (A)	as in command	Yes	No	Yes
153	Write Comment 1 <Tag 2>	Byte0-11 Comment 1<Tag2> (Top・・・End) (A)	as in command	Yes	No	No
154	Write Comment 2	Byte0-11 Comment 2 (Top・・・・End) (A)	as in command	Yes	No	No
155	Write Cut Point	Byte0-3 Cut Point [%] (+0,1,2,3) (F)	as in command	Yes	No	Yes
157	Write Cell Body-No.	Byte0-5 Cell Body-No. (Top・・・・End) (A)	as in command	Yes	No	No
162	Read Revision Code of Amplifier	none	Byte0-5 Revision Code of Amplifier (A) (Top・・・・End)	Yes	No	No
163	Read Revision Code of A/D Converter	none	Byte0-5 Revision Code of A/D Converter (A) (Top・・・・End)	Yes	No	No
167	Write Revision code of Amplifier	Byte0-5 Revision Code of Amplifier (A) (Top・・・・End)	as in command	Yes	No	No
168	Write revision code of A/D Converter	Byte0-5 Revision Code of A/D Converter (A) (Top・・・・End)	as in command	Yes	No	No
171	Write Material 2	Byte0 Cell Fill Fluid Code Byte1 Cell Isolator Material Code	as in command	Yes	No	No
172	Read Indication Coefficient (for FCX-A/C)	none	Byte0-3 Upper Display Value (+0,1,2,3) (F) Byte4-7 Lower Display Value (+0,1,2,3) (F) Byte8 Digit Number Under Decimal Point Byte9 Percent Indication	No	No	No
173	Write Indication Coefficient (for FCX-A/C)	Byte0-3 Upper Display Value(+0,1,2,3) (F) Byte4-7 Lower Display Value(+0,1,2,3) (F) Byte8 Digit Number Under Decimal Point Byte9 Percent Indication	as in command	No	No	No
174	Read Mode Below Cut Point	none	Byte0 Mode Below Cut Point	Yes	No	Yes
175	Write Mode Below Cut Point	Byte0 Mode Below Cut Point	as in command	Yes	No	Yes
176	Write Alarm Selection	Byte0 Alarm Selection (Burnout Direction)	as in command	Yes	No	Yes
177	Read Linearize Option Code	none	Byte0 Linearize Option Code	Yes	No	No
178	Read Linearize Option Compensation Point	none	Byte0-1 Compensation Point 1<LP1> (H,L) Byte2-3 Compensation Point 2<LP2> (H,L) Byte4-5 Compensation Point 3<LP3> (H,L) Byte6-7 Compensation Point 4<LP4> (H,L) Byte8-9 Compensation Point 5<LP5> (H,L) Byte10-11 Compensation Point 6<LP6> (H,L) Byte12-13 Compensation Point 7<LP7> (H,L) Byte14-15 Compensation Point 8<LP8> (H,L)	Yes	No	No
179	Read Linearize Option Compensation Point	none	Byte0-1 Compensation Point 9<LP9> (H,L) Byte2-3 Compensation Point 10<LP10> (H,L) Byte4-5 Compensation Point 11<LP11> (H,L) Byte6-7 Compensation Point 12<LP12> (H,L) Byte8-9 Compensation Point 13<LP13> (H,L) Byte10-11 Compensation Point 14<LP14>(H,L)	Yes	No	No

180	Read Linearize Option Compensation value	none	Byte0-1 Compensation Value 1<CV1> (H,L) Byte2-3 Compensation Value 2<CV2> (H,L) Byte4-5 Compensation Value 3<CV3> (H,L) Byte6-7 Compensation Value 4<CV4> (H,L) Byte8-9 Compensation Value 5<CV5> (H,L) Byte10-11 Compensation Value 6<CV6> (H,L) Byte12-13 Compensation Value 7<CV7> (H,L) Byte14-15 Compensation Value 8<CV8> (H,L)	Yes	No	No
181	Read Linearize Option Compensation value	none	Byte0-1 Compensation Value 9<CV9> (H,L) Byte2-3 Compensation Value 10<CV10> (H,L) Byte4-5 Compensation Value 11<CV11> (H,L) Byte6-7 Compensation Value 12<CV12> (H,L) Byte8-9 Compensation Value 13<CV13> (H,L) Byte10-11 Compensation Value 14<CV14>(H,L)	Yes	No	No
182	Write Linearize Option Code	Byte0 Linearize Option Code	as in command	Yes	No	No
183	Write Linearize Option Compensation Point	Byte0-1 Compensation Point 1<LP1> (H,L) Byte2-3 Compensation Point 2<LP2> (H,L) Byte4-5 Compensation Point 3<LP3> (H,L) Byte6-7 Compensation Point 4<LP4> (H,L) Byte8-9 Compensation Point 5<LP5> (H,L) Byte10-11 Compensation Point 6<LP6> (H,L) Byte12-13 Compensation Point 7<LP7> (H,L) Byte14-15 Compensation Point 8<LP8> (H,L)	as in command	Yes	No	No
184	Write Linearize Option Compensation Point	Byte0-1 Compensation Point 9<LP9> (H,L) Byte2-3 Compensation Point 10<LP10>(H,L) Byte4-5 Compensation Point 11<LP11>(H,L) Byte6-7 Compensation Point 12<LP12>(H,L) Byte8-9 Compensation Point 13<LP13>(H,L) Byte10-11 Compensation Point14<LP14>(H,L)	as in command	Yes	No	No
185	Write Linearize Option Compensation Value	Byte0-1 Compensation Value 1<CV1> (H,L) Byte2-3 Compensation Value 2<CV2> (H,L) Byte4-5 Compensation Value 3<CV3> (H,L) Byte6-7 Compensation Value 4<CV4> (H,L) Byte8-9 Compensation Value 5<CV5> (H,L) Byte10-11 Compensation Value 6<CV6> (H,L) Byte12-13 Compensation Value 7<CV7> (H,L) Byte14-15 Compensation Value 8<CV8> (H,L)	as in command	Yes	No	No
186	Write Linearize Option Compensation Value	Byte0-1 Compensation Value 9<CV9> (H,L) Byte2-3 Compensation Value 10<CV10>(H,L) Byte4-5 Compensation Value 11<CV11>(H,L) Byte6-7 Compensation Value 12<CV12>(H,L) Byte8-9 Compensation Value 13<CV13>(H,L) Byte10-11 Compensation Value14<CV14>(H,L)	as in command	Yes	No	No
187	Read Memory Data	Byte0-2 Access Address (H,M,L) Byte3 Access Byte Number (n)	Byte0-2 Access Address <Top Address> (H,M,L) Byte3 Access Byte Number (n) Byte4-x Data+0・・・Data+(n-1)	Yes	No	No
188	Write Memory Data	Byte0-2 Access Address<Top address>(H,M,L) Byte3 Access Byte Number (n) Byte4-x Data+0・・・Data+(n-1)	as in command	No	No	No
189	(Reserved)			-	-	-
190	(Reserved)			-	-	-
193	Read Indication Coefficient	none	Byte0-3 Upper Display Value (+0,1,2,3) (F) Byte4-7 Lower Display Value (+0,1,2,3) (F) Byte8 Not used (=00) Byte9 Digit Number Under Decimal Point Byte10-11 LCD Unit Code Byte12-13 Option (H,L)	Yes	No	Yes
194	Write Indication Coefficient	Byte0-3 Upper Display Value(+0,1,2,3) (F) Byte4-7 Lower Display Value (+0,1,2,3) (F) Byte8 Not used (=00) Byte9 Digit Number Under Decimal Point Byte10-11 LCD Unit Code Byte12-13 Option (H,L)	as in command	Yes	No	Yes
195	Read Serial-No.	none	Byte0-5 Serial-No. (Top・・・・End)	Yes	No	Yes
196	Write Serial-No.	Byte0-5 Serial-No. (Top・・・・End)	as in command	Yes	No	No
197	Read Burnout Current Code	none	Byte0-1 Burnout Current Code (+0,1)	Yes	No	Yes
198	Write Burnout Current Code	Byte0-1 Burnout Current Code (+0,1)	as in command	Yes	No	Yes

Data types:

A ASCII string(packed 4 characters per 3 bytes
B Bit-mapped flags(bit 0=multisensor device; bit 1=EEPROM control required)
D Date(day, month, year-19XX)
F Floating point(4 byte IEEE 754)
H Integers xxxxx yyy (xxxxx=hardware rev., yyy=physical signaling code
Unmarked items are 8-,16- or 24-bit integers