

Distell Meter Download Protocol

Distell Meters use a virtual serial port via the FTDI USB chip. The serial port used should be user-selectable, though the range of possible ports may be chosen at runtime by examining the registry data under `HKLM\SYSTEM\ControlSet001\Enum\FTDIBUS`. Note that there is no reliable method to discover the serial port at run time, other than polling for recognisable data during a trial data download.

The serial port parameters are: 9600 baud, no parity, 8 data bits, one stop bit. Settings can be verified by using a simple terminal emulator, e.g. hyperterminal.

Data is sent from the meter (a) following each sample measurement (runtime download), and (b) in the download process initiated from the meter (batch download). The data has the same format in both cases.

An example of the data sent from the meter is:

A, 384, 352, 373, 187, 178, 173, 174, 210, 253, 8, 14, 22, 00, 30, 07, 04, B

This is sent as a plain string of text. The number of fields in this string is not fixed, so software should be able to deal with more data than shown in this example.

The data between the end markers (**A** and **B** in this example) is split into two sections:

- the first part is the sample data, highlighted in blue above, and can vary in length
- the second part, highlighted in red, is always 8 data fields

The meaning of each field is:

Field	Possible values	Meaning
Start marker	A or C	A indicates a Distell Fatmeter (Fish or Meat) C indicates a Distell Freshness meter
First data section	0 – 999	Actual sample values x10, i.e. 75.2 would be given as 752, 24.9 as 249, etc.
Second data section: field 1	0 – 999	Average of the sample values
Second data section: field 2	1 – 16	Number of samples taken
Second data section: field 3	0 – 255	Product code (see later)
Second data section: field 4	0 – 59	Minute part of the time the sample was taken
Second data section: field 5	0 – 23	Hour that the sample was taken
Second data	1 – 31	Day of the month that the sample was taken

section: field 6		
Second data section: field 7	1 – 12	Month that the sample was taken
Second data section: field 8	8+	Year that the sample was taken, 8=2008, 9=2009, etc.
End marker	B	End of the data string

In a batch download the final data string will be followed by a # (ASCII 35) character. Runtime downloads have no further data. Software should ignore any characters between the final marker and the marker at the start of the next data string.

Product Codes

Field 3 of the second data section indicates the product code selected on the meter when the sample was taken. This number refers to the following table:

Value	Fat Meter Product	Freshness Meter Product
1	Anchovy-2	Torry Std
2	Argentine-1	Cod-1
3	Argentine-2	Cod-2
4	Butterfish-1	Cod-3
5	Butterfish-2	Cod-4
6	Char-1	Haddock-1
7	Char-2	Haddock-2
8	Eel-1	Whiting-1
9	Eel-2	Whiting-2
10	Trout-1	Saithe-1
11	Trout-2	Saithe-2
12	Salmon-1	Redfish-1
13	Salmon-2	Redfish-2
14	Salmon-3	Herring-1
15	Salmon-4	Herring-2
16	Salmon-5	Herring-3
17	Sockeye-1	Herring-4
18	Sockeye-2	Herring-5
19	Sockeye-3	Herring-6
20	Coho-1	B.Mackerel-1
21	Coho-2	B.Mackerel-2
22	Coho-3	Salmon-1
23	Chinook-1	Salmon-2
24	Chinook-2	B.Whiting-1
25	Chinook-3	B.Whiting-2
26	Chinook-4	Chisawasa-1
27	Herring-1	Chisawasa-2
28	Herring-2	Ladyfish-1
29	H.Mackerel-1	Ladyfish-2
30	H.Mackerel-2	Seabream-1
31	B.Mackerel-1	Seabream-2

32	B.Mackerel-2	S.Mackerel-1
33	J.Mackerel-1	S.Mackerel-2
34	J.Mackerel-2	Tilapia-1
35	WA.Mackerel-1	Tilapia-2
36	WA.Mackerel-2	Anchovy-1
37	Sardine-1	Anchovy-2
38	Sardine-2	Argentine-1
39	Sardine-3	Argentine-2
40	Sardine-6	Butterfish-1
41	Sardine-4	Butterfish-2
42	Sardine-5	Carp-1
43	Saury-1	Carp-2
44	Sprat-1	Char-1
45	Seabass-1	Char-2
46	B.Bream-1	Eel-1
47	B.Bream-2	Eel-2
48	G.Bream-1	H.Mackerel-1
49	G.Bream-2	H.Mackerel-2
50	S.Warehou-1	J.Mackerel-1
51	S.Warehou-2	J.Mackerel-2
52	Bluefin-1	WA.Mackerel-1
53	Bluefin-2	WA.Mackerel-2
54	Bonito-1	Sockeye-1
55	Bonito-2	Sockeye-2
56	Albacore-1	Coho-1
57	Albacore-2	Coho-2
58	B.Whiting-1	King-1
59	B.Whiting-2	King-2
60	Carp-1	Chinook-1
61	Carp-2	Chinook-2
62	Carp-3	Sardine-1
63	Carp-4	Sardine-2
64	Seabass-2	Sardine-3
65	Sprat-2	Sardine-4
66	Saury-2	Sardine-5
67	Anchovy-1	Sardine-6
68	Pilchard-1	Saury-1
69	Pilchard-2	Saury-2
70	Catfish-1	Sprat-1
71	Catfish-2	Sprat-2
72	Yellowfin-1	B.Bream-1
73	Yellowfin-2	B.Bream-2
74	Skipjack-1	G.Bream-1
75	Skipjack-2	G.Bream-2
76	Bigeye-1	Warehou-1
77	Bigeye-2	Warehou-2
78	Tongol-1	Trout-1
79	Tongol-2	Trout-2
80	Chum-1	Bluefin-1
81	Chum-2	Bluefin-2
82	Seabass-3	Bonito-1
83	Seabass-4	Bonito-2

84	Catfish-3	Albacore-1
85	Catfish-4	Albacore-2
86	Pink-1	Bigeye-1
87	Pink-2	Bigeye-2
88	Snapper-1	Skipjack-1
89	Snapper-2	Skipjack-2
90	Mullet-1	Yellowfin-1
91	Mullet-2	Yellowfin-2
92	Turbot-1	Tongol-1
93	Turbot-2	Tongol-2
94	Croaker-1	Chum-1
95	Croaker-2	Chum-2
96	Capelin-1	Catfish-1
97	Capelin-2	Catfish-2
98	Product-1	Pink-1
99	Product-2	Pink-2
100	Product-3	Snapper-1
101	Beef-1	Snapper-2
102	Beef-2	Mullet-1
103	Sausage-1	Mullet-2
104	Burger-1	Turbot-1
105	Chicken-1	Turbot-2
106	Chicken-2	Croaker-1
107	Venison-1	Croaker-2
108	Ham-1	Capelin-1
109	Burger-2	Capelin-2
110	Horse-1	Swordfish-1
111	Sausage-4	Swordfish-2
112	Luncheon-1	
113	Lamb-1	
114	Sausage-3	
115	Pork-1	
116	Pork-2	
117	Sausage-2	
118	Reindeer-1	
119	Salami-1	
120	Venison-2	
121	Beef-3	
122	Beef-4	
123	Beef-5	
124	Pork/Beef-1	
125	Pork/Beef-2	
126	Pork-3	
127	Pork-4	
128	Pork-5	
129	Split Beef-1	
130	Split Beef-2	
131	Chicken-3	
132	Chicken-4	
133	Salami-2	
134	Sausage-5	
135	Sausage-6	

136	Sausage-7	
137	Faccenda-1	
138	Faccenda-2	
139	Maunder lamb	
140	BSTLM-1	
141	BGTY-1	
142		
143		
144		
145		
146		
147		
148		
149		
150		
151		
152		
153	Cream-1	
154	Cream-2	
155	Butter-1	
156	Butter-2	
157	Margarine-1	
158	Margarine-2	
159	Cheese-1	
160	Cheese-2	
161	Cheese-3	
162	Mayonnaise-1	
163	Mayonnaise-2	
164		
165		
166		
167		
168		
169	Dairy-1	
170	Dairy-2	
171	Dairy-3	
172	Dairy-4	
173	Dairy-5	
174	Dairy-6	
175	Dairy-7	
176	Dairy-8	
177	Dairy-9	
178	Dairy-10	
179	Swordfish-1	
180	Swordfish-2	
181		
182		
183		
184	Fish-1	
185	Fish-2	
186	Fish-3	
187	Fish-4	

188	Fish-5	
189	Fish-6	
190	Fish-7	
191	Fish-8	
192	Fish-9	
193	Fish-10	
194		
195		
196		
197		
198		
199		
200	Potato-1	
201		
202		
203		
204		
205		
206		
207		
208		
209		
210	Moisture-1	
211	Moisture-2	
212	Moisture-3	
213	Moisture-4	
214	Moisture-5	
215	Moisture-6	
216	Moisture-7	
217	Moisture-8	
218	Moisture-9	
219	Moisture-10	
220		
221		
222		
223		Fish-1
224		Fish-2
225	Meat-1	Fish-3
226	Meat-2	Fish-4
227	Meat-3	Fish-5
228	Meat-4	Fish-6
229	Meat-5	Fish-7
230	Meat-6	Fish-8
231	Meat-7	Fish-9
232	Meat-8	Fish-10
233	Meat-9	
234	Meat-10	
235	Produce-1	Produce-1
236	Produce-2	Produce-2
237	Produce-3	Produce-3
238	Produce-4	Produce-4
239	Produce-5	Produce-5

240	Produce-6	Produce-6
241	Produce-7	Produce-7
242	Produce-8	Produce-8
243	Produce-9	Produce-9
244	Produce-10	Produce-10
245	Produce-11	Produce-11
246	Produce-12	Produce-12
247	Produce-13	Produce-13
248	Produce-14	Produce-14
249	Produce-15	Produce-15
250	Research-1	Research-1
251	Research-2	Research-2
252	Research-3	Research-3
253	Research-4	Research-4
254	Research-5	Research-5
255	Research-6	Research-6