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1 FUNCTION_BLOCK T_FIBRO
2 TITLE = 'T_FIBRO'
3 //
4 // RLD Automation copyright 2017
5 //
6 // 16-04-2017: mjo; reconstruct SCL code from STL
7 //
8 //
9 { S7_tasklist := 'OB100;OB102' }
10 VERSION : '2.0'
11 AUTHOR   : mjo
12 NAME     : T_FIBRO
13 FAMILY   : FIBRO
14
15
16 VAR_INPUT
17   HW_ADR: INT;           //Hardware adres van de CP-kaart
18   DB_NR: INT;           //DB die gebruikt wordt om data te ontvangen van de Fibrolaser
19   DB_index: BLOCK_DB; //DB met verwijzingen
20   DB_data: BLOCK_DB; //DB met gebufferde data
21   LengteDB: INT;       //Maximum lengte van de output db om te voorkomen dat het fout g
    aat
22   Test: BOOL;          //Input om de test mode in te schakelen
23   Bewakingstijd: TIME := T#45S;
24   Wachtstijd: TIME := T#2S;
25 END_VAR
26 VAR_IN_OUT
27
28 END_VAR
29 VAR_OUTPUT
30   Fibro : STRUCT //Informatie uit Fibrolaser unit A
31     Brand_zone_2: BOOL;
32     Brand_zone_3: BOOL;
33     Brand_zone_4: BOOL;
34     Brand_zone_5: BOOL;
35     Brand_zone_6: BOOL;
36     Brand_zone_7: BOOL;
37     Brand_zone_8: BOOL;
38     Brand_zone_9: BOOL;
39     Brand_zone_10: BOOL;
40     Brand_zone_11: BOOL;
41     Brand_zone_12: BOOL;
42     Brand_zone_13: BOOL;
43     Brand_zone_14: BOOL;
44     Brand_zone_16: BOOL;
45     Brand_zone_17: BOOL;
46     Brand_zone_18: BOOL;
47     Brand_zone_19: BOOL;
48     Brand_zone_20: BOOL;
49     Brand_zone_21: BOOL;
50     Brand_zone_23: BOOL;
51     Brand_zone_25: BOOL;
52     Brand_zone_27: BOOL;
53     Brand_zone_29: BOOL;
54     Brand_zone_30: BOOL;
55     Brand_zone_31: BOOL;
56     Brand_zone_32: BOOL;
57     Brand_zone_33: BOOL;
58     Brand_zone_34: BOOL;
59     Brand_zone_35: BOOL;
60     Brand_zone_38: BOOL;
61     Brand_zone_39: BOOL;
62     Brand_zone_40: BOOL;
63     Brand_zone_41: BOOL;
64     Brand_zone_42: BOOL;
65     Brand_zone_43: BOOL;
66     Brand_zone_44: BOOL;
67     Brand_zone_46: BOOL;
68     Brand_zone_47: BOOL;
69     Brand_zone_48: BOOL;
70     Brand_zone_49: BOOL;
71     Brand_zone_50: BOOL;
72     Brand_zone_51: BOOL;
73     Brand_zone_52: BOOL;
74     Brand_zone_53: BOOL;
75     Brand_zone_54: BOOL;
76     Brand_zone_55: BOOL;
77     Brand_zone_56: BOOL;
78     Storing_zone_1: BOOL;
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```
79 Storing_zone_2: BOOL;
80 Storing_zone_3: BOOL;
81 Storing_zone_4: BOOL;
82 Storing_zone_5: BOOL;
83 Storing_zone_6: BOOL;
84 Storing_zone_7: BOOL;
85 Storing_zone_8: BOOL;
86 Storing_zone_9: BOOL;
87 Storing_zone_10: BOOL;
88 Storing_zone_11: BOOL;
89 Storing_zone_12: BOOL;
90 Storing_zone_13: BOOL;
91 Storing_zone_14: BOOL;
92 Storing_zone_15: BOOL;
93 Storing_zone_16: BOOL;
94 Storing_zone_17: BOOL;
95 Storing_zone_18: BOOL;
96 Storing_zone_19: BOOL;
97 Storing_zone_20: BOOL;
98 Storing_zone_21: BOOL;
99 Storing_zone_22: BOOL;
100 Storing_zone_23: BOOL;
101 Storing_zone_24: BOOL;
102 Storing_zone_25: BOOL;
103 Storing_zone_26: BOOL;
104 Storing_zone_27: BOOL;
105 Storing_zone_28: BOOL;
106 Storing_zone_29: BOOL;
107 Storing_zone_30: BOOL;
108 Storing_zone_31: BOOL;
109 Storing_zone_32: BOOL;
110 Storing_zone_33: BOOL;
111 Storing_zone_34: BOOL;
112 Storing_zone_35: BOOL;
113 Storing_zone_36: BOOL;
114 Storing_zone_37: BOOL;
115 Storing_zone_38: BOOL;
116 Storing_zone_39: BOOL;
117 Storing_zone_40: BOOL;
118 Storing_zone_41: BOOL;
119 Storing_zone_42: BOOL;
120 Storing_zone_43: BOOL;
121 Storing_zone_44: BOOL;
122 Storing_zone_45: BOOL;
123 Storing_zone_46: BOOL;
124 Storing_zone_47: BOOL;
125 Storing_zone_48: BOOL;
126 Storing_zone_49: BOOL;
127 Storing_zone_50: BOOL;
128 Storing_zone_51: BOOL;
129 Storing_zone_52: BOOL;
130 Storing_zone_53: BOOL;
131 Storing_zone_54: BOOL;
132 Storing_zone_55: BOOL;
133 Storing_zone_56: BOOL;
134 Storing_zone_57: BOOL;
135 END_STRUCT;
136 CSF: BOOL; //Communicatie werkt niet goed
137 QINBEDR: BOOL; //Communicatie werkt goed
138 QSTORING: BOOL; //Storing naar MMI
139 QSTCOM: BOOL; //Storing, time out op het ontvangen van goede data
140 QTIME: TIME;
141 END_VAR
142
143 VAR
144 obnr: INT;
145 Receive_Fibro: P_RCV_RK; //Ontvangen van data uit de Fibrolaser
146 Verwerk_data: FibroInt; //Verwerken op ontvangen data
147 Ontvangstbewaking: TON; //Bewakingstimer voor het ontvangen van data
148 Wachtbewaking: TON; //Bewakingstimer voor het ontvangen van data
149 New_data: BOOL; //Nieuwe data ontvangen van de Fibrolaser
150 Lengte_data: INT; //Lengte ontvangen data
151 Verwerken_klaar: BOOL; //oud nieuw vergelijk klaar met verwerken data
152 Data_received: BOOL; //oud nieuw vergelijk ontvangen van data
153 Timer_sturing: BOOL; //Variabele om de timer te sturen
154 STCOM_OLD: BOOL; //voor flank detectie
155 Start_wacht: BOOL; //Variabele om de timer wacht te starten
156 Telegram_Ok: BOOL; //Index dat het telegram toch verwerkt mag worden
157 Berekend_CRC8: BYTE; //Berekenen CRC8 over ontvangen data
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```
158 END_VAR
159
160 VAR_TEMP
161   Return_value: INT; //Return value BLKMOVE
162   erg: INT;
163   top_si: STRUCT
164     ev_class: BYTE;
165     ev_num: BYTE;
166     priority: BYTE;
167     num: BYTE;
168     typ2_3: BYTE;
169     typ1: BYTE;
170     zil: WORD;
171     zi2_3: DWORD;
172 END_STRUCT;
173   start_up_si: STRUCT
174     ev_class: BYTE;
175     ev_num: BYTE;
176     priority: BYTE;
177     num: BYTE;
178     typ2_3: BYTE;
179     typ1: BYTE;
180     zil: WORD;
181     zi2_3: DWORD;
182 END_STRUCT;
183   crc8: BYTE;
184 END_VAR
185
186 BEGIN
187
188   (* read actual startup info *)
189   (* OB1_SCAN_1 BYTE - B#16#01: Abschluss des Neustarts (Warmstarts)
190                      - B#16#02: Abschluss des Wiederanlaufs
191                      - B#16#03: Abschluss des freien Zyklus
192                      - B#16#04: Abschluss des Kaltstarts
193                      - B#16#05: Erster OB 1-Zyklus der neuen Master-CPU nach
194                          Master-Reserve-Umschaltung und STOP des
195                          bisherigen Masters *)
196
197   erg := RD_SINFO (TOP_SI := top_si, START_UP_SI := start_up_si);
198
199   (* bewaar obnr voor later gebruik, converteer vanaf byte naar int *)
200   obnr := BYTE_TO_INT(top_si.num);
201
202   IF (obnr = 100) OR (obnr = 102) THEN
203     Telegram_Ok := 0;
204   END_IF;
205
206   IF (NOT Test) THEN
207
208     Receive_Fibro.EN_R := 1;
209     Receive_Fibro.R := 0;
210     Receive_Fibro.LADDR := HW_ADR;
211     Receive_Fibro.DB_NO := DB_NR;
212     Receive_Fibro.DBB_NO := 0;
213
214     (* ontvang data vanaf fibro laser *)
215     Receive_Fibro();
216
217     New_data := Receive_Fibro.NDR;
218     Lengte_data := Receive_Fibro.LEN;
219
220     IF (New_data OR Telegram_Ok) THEN
221
222       //controleer crc8
223       Berekend_CRC8 := T_CRC8(DB_NR := DB_NR, DB_START := 0, DB_LEN := Lengte_data, DB
224         _CRC8 := 120);
225
226       //vanuit de data is de crc8 berekend, accepteer data alleen als de crc8 juist is
227       IF WORD_TO_BLOCK_DB(INT_TO_WORD(DB_NR)).DW[0] <> Berekend_CRC8 THEN
228         Telegram_Ok := false;
229       END_IF;
230
231       Verwerk_data.OntvangstDB := DB_NR;
232       Verwerk_data.AantOntvBytes := Lengte_data;
233
234       //DIW [AR2,P#106.0] = DIW [AR2,P#6.0]
235       Verwerk_data.DataDb := DB_data;
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236 //DIW [AR2,P#108.0] = DIW [AR2,P#4.0]
237 Verwerk_data.IndexDB := DB_Index;
238
239 Verwerk_data.LengteDB := LengteDB;
240 Verwerk_data.Telegram_Ok := Telegram_Ok;
241
242 Verwerk_data();
243 END_IF;
244
245 IF ((obnr = 100) OR New_data OR (obnr = 102)) THEN
246   Timer_sturing := 0;
247 ELSE
248   Timer_sturing := 1;
249 END_IF;
250
251 Ontvangstbewaking.IN := Timer_sturing;
252 Ontvangstbewaking.PT := Bewakingstijd;
253
254 Ontvangstbewaking();
255
256 QSTCOM := Ontvangstbewaking.Q;
257 QTIME := Ontvangstbewaking.ET;
258
259 IF (NOT (Start_wacht) AND Verwerk_data.Data_ok) THEN
260   Start_wacht := 1;
261 END_IF;
262
263 IF (Verwerk_data.Nieuwe_data AND Start_wacht) THEN
264   Start_wacht := 0;
265 END_IF;
266
267 Wachtbewaking.IN := Start_wacht;
268 Wachtbewaking.PT := Wachttijd;
269
270 Wachtbewaking();
271
272 Telegram_Ok := Wachtbewaking.Q;
273 END_IF;
274
275 IF (Test OR Verwerk_data.Error_Recv) THEN
276
277   Timer_sturing := 0;
278   Ontvangstbewaking.IN := Timer_sturing;
279   Ontvangstbewaking.PT := Bewakingstijd;
280
281   Ontvangstbewaking();
282
283   QSTCOM := Ontvangstbewaking.Q;
284   QTIME := Ontvangstbewaking.ET;
285 END_IF;
286
287
288 IF (((NOT Verwerken_klaar AND Verwerk_data.Nieuwe_data) OR Test) OR (NOT QSTCOM AND
STCOM_OLD)) THEN
289
290 //LW 30 := DIW [AR2,P#6.0]; openen db vanuit input parameters
291 //OPN DB [LW 30];
292
293 Fibro.Brand_zone_2 := DB_data.DX0.0;
294 Fibro.Brand_zone_3 := DB_data.DX0.1;
295 Fibro.Brand_zone_4 := DB_data.DX0.2;
296 Fibro.Brand_zone_5 := DB_data.DX0.3;
297 Fibro.Brand_zone_6 := DB_data.DX0.4;
298 Fibro.Brand_zone_7 := DB_data.DX0.5;
299 Fibro.Brand_zone_8 := DB_data.DX0.6;
300 Fibro.Brand_zone_9 := DB_data.DX0.7;
301 Fibro.Brand_zone_10 := DB_data.DX1.0;
302 Fibro.Brand_zone_11 := DB_data.DX1.1;
303 Fibro.Brand_zone_12 := DB_data.DX1.2;
304 Fibro.Brand_zone_13 := DB_data.DX1.3;
305 Fibro.Brand_zone_14 := DB_data.DX1.4;
306
307 Fibro.Brand_zone_16 := DB_data.DX1.5;
308 Fibro.Brand_zone_17 := DB_data.DX1.6;
309 Fibro.Brand_zone_18 := DB_data.DX1.7;
310 Fibro.Brand_zone_19 := DB_data.DX2.0;
311 Fibro.Brand_zone_20 := DB_data.DX2.1;
312 Fibro.Brand_zone_21 := DB_data.DX2.2;
313
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314 Fibro.Brand_zone_23 := DB_data.DX2.3;
315
316 Fibro.Brand_zone_25 := DB_data.DX2.4;
317
318 Fibro.Brand_zone_27 := DB_data.DX2.5;
319
320 Fibro.Brand_zone_29 := DB_data.DX2.6;
321 Fibro.Brand_zone_30 := DB_data.DX2.7;
322 Fibro.Brand_zone_31 := DB_data.DX3.0;
323 Fibro.Brand_zone_32 := DB_data.DX3.1;
324 Fibro.Brand_zone_33 := DB_data.DX3.2;
325 Fibro.Brand_zone_34 := DB_data.DX3.3;
326 Fibro.Brand_zone_35 := DB_data.DX3.4;
327
328 Fibro.Brand_zone_38 := DB_data.DX3.5;
329 Fibro.Brand_zone_39 := DB_data.DX3.6;
330 Fibro.Brand_zone_40 := DB_data.DX3.7;
331 Fibro.Brand_zone_41 := DB_data.DX4.0;
332 Fibro.Brand_zone_42 := DB_data.DX4.1;
333 Fibro.Brand_zone_43 := DB_data.DX4.2;
334 Fibro.Brand_zone_44 := DB_data.DX4.3;
335
336 Fibro.Brand_zone_46 := DB_data.DX4.4;
337 Fibro.Brand_zone_47 := DB_data.DX4.5;
338 Fibro.Brand_zone_48 := DB_data.DX4.6;
339 Fibro.Brand_zone_49 := DB_data.DX4.7;
340 Fibro.Brand_zone_50 := DB_data.DX5.0;
341 Fibro.Brand_zone_51 := DB_data.DX5.1;
342 Fibro.Brand_zone_52 := DB_data.DX5.2;
343 Fibro.Brand_zone_53 := DB_data.DX5.3;
344 Fibro.Brand_zone_54 := DB_data.DX5.4;
345 Fibro.Brand_zone_55 := DB_data.DX5.5;
346 Fibro.Brand_zone_56 := DB_data.DX5.6;
347
348 Fibro.Storing_zone_1 := DB_data.DX16.0;
349 Fibro.Storing_zone_2 := DB_data.DX16.1;
350 Fibro.Storing_zone_3 := DB_data.DX16.2;
351 Fibro.Storing_zone_4 := DB_data.DX16.3;
352 Fibro.Storing_zone_5 := DB_data.DX16.4;
353 Fibro.Storing_zone_6 := DB_data.DX16.5;
354 Fibro.Storing_zone_7 := DB_data.DX16.6;
355 Fibro.Storing_zone_8 := DB_data.DX16.7;
356 Fibro.Storing_zone_9 := DB_data.DX17.0;
357 Fibro.Storing_zone_10 := DB_data.DX17.1;
358 Fibro.Storing_zone_11 := DB_data.DX17.2;
359 Fibro.Storing_zone_12 := DB_data.DX17.3;
360 Fibro.Storing_zone_13 := DB_data.DX17.4;
361 Fibro.Storing_zone_14 := DB_data.DX17.5;
362 Fibro.Storing_zone_15 := DB_data.DX17.6;
363 Fibro.Storing_zone_16 := DB_data.DX17.7;
364 Fibro.Storing_zone_17 := DB_data.DX18.0;
365 Fibro.Storing_zone_18 := DB_data.DX18.1;
366 Fibro.Storing_zone_19 := DB_data.DX18.2;
367 Fibro.Storing_zone_20 := DB_data.DX18.3;
368 Fibro.Storing_zone_21 := DB_data.DX18.4;
369 Fibro.Storing_zone_22 := DB_data.DX18.5;
370 Fibro.Storing_zone_23 := DB_data.DX18.6;
371 Fibro.Storing_zone_24 := DB_data.DX18.7;
372 Fibro.Storing_zone_25 := DB_data.DX19.0;
373 Fibro.Storing_zone_26 := DB_data.DX19.1;
374 Fibro.Storing_zone_27 := DB_data.DX19.2;
375 Fibro.Storing_zone_28 := DB_data.DX19.3;
376 Fibro.Storing_zone_29 := DB_data.DX19.4;
377 Fibro.Storing_zone_30 := DB_data.DX19.5;
378 Fibro.Storing_zone_31 := DB_data.DX19.6;
379 Fibro.Storing_zone_32 := DB_data.DX19.7;
380 Fibro.Storing_zone_33 := DB_data.DX20.0;
381 Fibro.Storing_zone_34 := DB_data.DX20.1;
382 Fibro.Storing_zone_35 := DB_data.DX20.2;
383 Fibro.Storing_zone_36 := DB_data.DX20.3;
384 Fibro.Storing_zone_37 := DB_data.DX20.4;
385 Fibro.Storing_zone_38 := DB_data.DX20.5;
386 Fibro.Storing_zone_39 := DB_data.DX20.6;
387 Fibro.Storing_zone_40 := DB_data.DX20.7;
388 Fibro.Storing_zone_41 := DB_data.DX21.0;
389 Fibro.Storing_zone_42 := DB_data.DX21.1;
390 Fibro.Storing_zone_43 := DB_data.DX21.2;
391 Fibro.Storing_zone_44 := DB_data.DX21.3;
392 Fibro.Storing_zone_45 := DB_data.DX21.4;
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393     Fibro.Storing_zone_46 := DB_data.DX21.5;
394     Fibro.Storing_zone_47 := DB_data.DX21.6;
395     Fibro.Storing_zone_48 := DB_data.DX21.7;
396     Fibro.Storing_zone_49 := DB_data.DX22.0;
397     Fibro.Storing_zone_50 := DB_data.DX22.1;
398     Fibro.Storing_zone_51 := DB_data.DX22.2;
399     Fibro.Storing_zone_52 := DB_data.DX22.3;
400     Fibro.Storing_zone_53 := DB_data.DX22.4;
401     Fibro.Storing_zone_54 := DB_data.DX22.5;
402     Fibro.Storing_zone_55 := DB_data.DX22.6;
403     Fibro.Storing_zone_56 := DB_data.DX22.7;
404     Fibro.Storing_zone_57 := DB_data.DX23.0;
405     END_IF;
406
407     Verwerken_klaar := Verwerk_data.Nieuwe_data;
408     CSF := QSTCOM;
409     STCOM_OLD := QSTCOM;
410
411     IF (QSTCOM OR Verwerk_data.Error_Recv) THEN
412         QINBEDR := 0;
413         QSTORING := 1;
414     ELSE
415         QINBEDR := 1;
416         QSTORING := 0;
417     END_IF;
418
419
420 END_FUNCTION_BLOCK
421
```