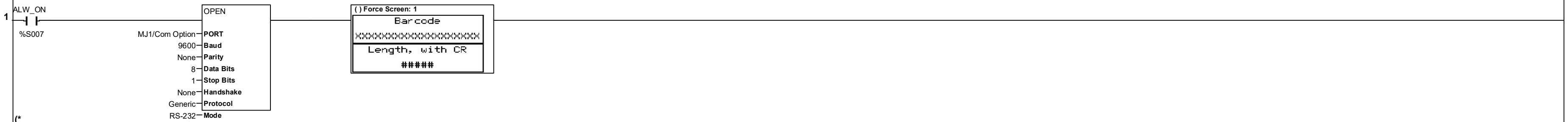
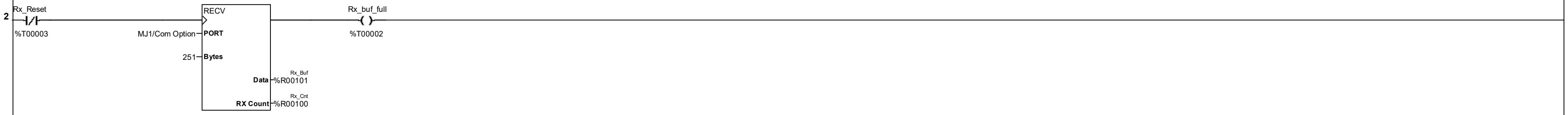
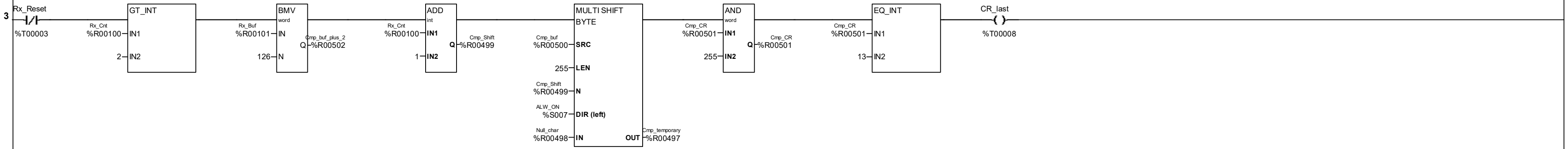
(* In this example, the bar code data will vary in length. Therefore, the method for receving characters is as follows:
1. Watch the RX Count Register (%R100).
2. When %R100 is nonzero but unchanged for 250mS, assume the transmission from the bar code reader is complete.
3. When the receive is complete, copy the data into another bank of registers (%R201-%R210), clear the receive buffer (%R101-110) and reset the Receive block.
4. The received characters stored in %R201-210 are displayed on Screen #1 on the OCS. *)



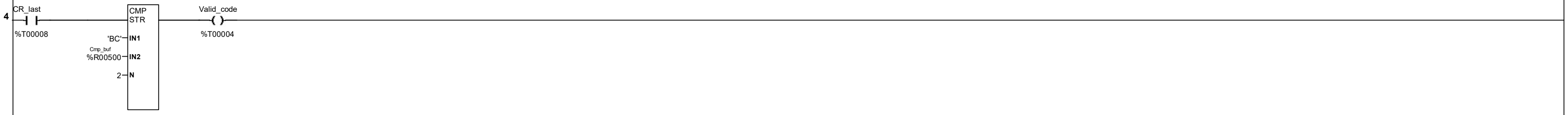
(*
Characters are received from a bar code reader. When not reset, the Receive Block is activated, allowing characters to be placed in the Receive buffer starting at register %R101 [Rx_Buf]. The buffer length is 251 characters (four less than the maximum allowed) = one character less than 126 words. Note that the [RX Count] parameter is %R100, located one word register before the buffer. So the length of the characters received is contiguous with the characters received. *)



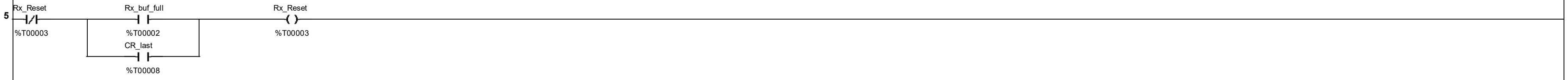
(*
If there are more than three characters in the Receive buffer, then
(i) copy the entire receive buffer of 251 characters to [Cmp_buf + 2words],
(ii) calculate the left shift necessary to move the last three characters, of all ***RECEIVED*** characters copied to [Cmp_buf + 2words], to the start of the Compare buffer,
(ii.a) so the first two characters of those last three will be in the low- and high-byte of Cmp_buf, and the last will be in the low-byte of word %R501 [Cmp_CR].
(iii) do the shift,
(iv) mask out the high-byte of word Cmp_CR
(v) compare word Cmp_CR to ASCII code 13 (carriage return) and assign CR_last bit accordingly
<<<Continued on next rung>>> *)



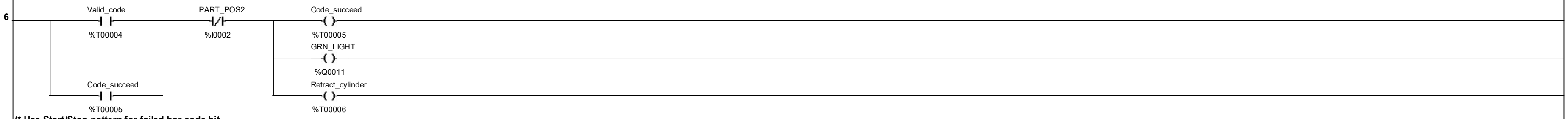
(* <<<Continued from previous rung>>>>
(vi) compare 'BC' to those first two characters in word Cmp_buf,
(vii) if all compares were true, then assign 1 to Valid_code *)



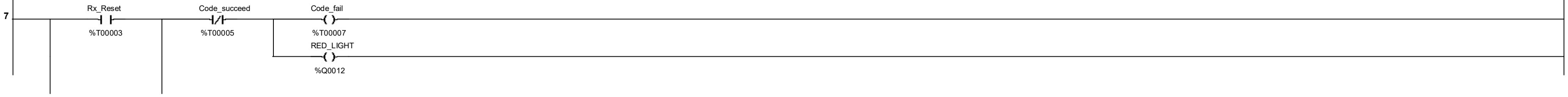
(*
If EITHER (receive buffer is full) OR (the last received character is a carriage return), then assign 1 to bit to deactivate RECV instruction on next scan
N.B. Rx_Reset will be a one-shot i.e. 1 for the next scan only *)

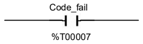


(* Use Start/Stop pattern for successful bar code bit
- Start: valid code (oneshot) bit from earlier rung
- Stop: part reaches position 2 *)



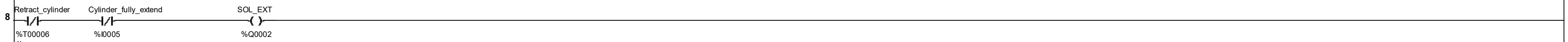
(* Use Start/Stop pattern for failed bar code bit
- Start: oneshot carriage return is last character received
- Stop: code succeeded from previous rung *)





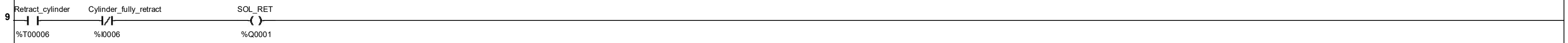
(*

Unless the cylinder should be retracted, activate the cylinder-exend soloenoid until the extended cylinder prox is reached *)



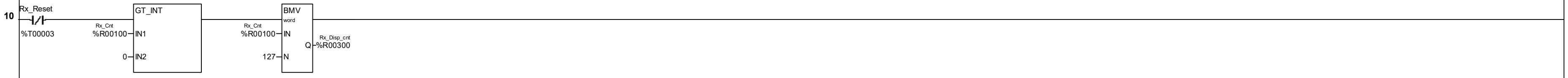
(*

When the cylinder should be retracted, activate the cylinder-retract solenoid until the retracted cylinder prox is reached *)



(*

Copy the count of the received characters and the entire receive buffer of 251 characters to the Display register buffer. *)


10
Rx_Reset
%T00003
Rx_Cnt
%R00100
IN1
0
IN2
GT_INT
BMV
word
Rx_Cnt
%R00100
IN
127
N
Q
Rx_Disp_cnt
%R00300