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TechNOTE

Title: Outputting ASCII text messages
Products(s): DCX-AT200/300, DCX-VM200/300
Keywords: ASCII, Text, Messages
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Summary
For many applications the 'intelligent operator interface' has begun to replace the need for a PC computer. This development does require however, that the motion controller 'shoulder more responsibility' for providing information to the machine/system operator.

Output Text Strings
The DCX 200/300 series controllers support outputting formatted ASCII text strings. The implementation of the output string commands was designed to mimic the 'C" library function 'printf'. Consider a gluing application. A sensor is used to monitor the glue level and indicate when the level has dropped below minimum. When this condition exist, the controller is to output the ASCII string "Glue reservoir below the minimum level".

```
GT100,IN5,WA.1,JR-2,MJ101        ;start background task 100, if glue level
                                 ;sensor is active wait 100 msec's. If
                                 ;sensor is inactive reservoir low) jump to
                                 ;macro 101.
MD101,OT"Glue reservoir below the minimum level \r"
```

Outputting Text with Formatted Data
The ASCII string can include the value that is stored in the accumulator (user register 0). In the previous example, the controller indicated when the glue reservoir was low. The example below will also report the position (an integer value) of axis #1:

```
GT100,IN5,WA.1,JR-2,MJ101        ;start background task 100. If sensor is
                                 ;inactive jump to macro 101.

MD101,1RL4,OT"Glue reservoir below the minimum level, Axis #1 = %d \r"
                                 ;1RL4 loads the position of axis #1 into
                                 ;the accumulator. %d outputs the value in
                                 ;the accumulator as an integer value.
```

If the value in the accumulator is a floating point number, use the Output text with Double (OD) command. Change the format specifier from %d to %f. Note: In the previous example, the position of axis #1 was an integer value. The position was loaded into the accumulator using a Read Long at location 4. To load the position of an axis as a floating point value, use the Read Double command at location 20.

```
MD101,1RL20,OT"Glue reservoir below the minimum level, Axis #1 = %f \r"
                                 ;1RD20 loads the floating point position
                                 ;of axis #1 into the accumulator. %f
                                 ;outputs the value in the accumulator as a
                                 ;floating point value.
```