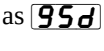
Understanding Watlow's
LED Character Set

Most Watlow controllers use a seven-segment LED display that limits our ability to display all letters of the alphabet clearly and uniquely. We do attempt to use some standards for consistency to better help you predict what characters you are looking at. Because we have manufactured various model controllers over many years using different development teams, sometimes the odd character may fail to live up to the standard. Here is the usual standard with some of the notable exceptions listed:

LED Font	Actual Character	**Additional Information**
	1	We differentiate the number one by avoiding the lower case letter "L" and the uppercase letter "I". See "i" and "l" for more details.
	2	The number two is normally not confused with any character, except possibly rare occurrences of the letter "Z". When "Z" is used on the Power Series it is identical to the number two.
	3	The number three is normally not confused with any other character.
	4	The number four is normally not confused with any other character.
	5	The number five and letter "S" are identical. You must use context to differentiate them. Currently there are no prompts that are a mixture of letters and the number five, so a prompt such as  is assumed to be "GSd", not "G5d".
	6	We differentiate number six from the letter "b" by using a bar at the top of the number "6". See the letter "b".
	7	The number seven may be confused with part of the letter "M".
	8	We differentiate eight from the letter "B" by using lower case letter "b".
	9	The number nine and letter "g" are identical. You must use context to differentiate them. At present time, there are no prompts that are a mixture of letters and the number nine, so a prompt such as  is assumed to be "GSd", not "9Sd". We differentiate the number nine from the letter "q" by the absence of the bottom segment bar.
	0	We differentiate zero from the letter "o" by using lower case for the letter "o", although this is not always the case. See the letter "o"
	A	Upper case is always used.
	b	Lower case is always used. The letter "b" can be differentiated from the number six by the absence of the top segment bar. See the number "6".
	c	The upper case is the character that is primarily used, but occasionally a lower case is used.
	d	Lower case is always used.
	E	Upper case is always used.
	F	Upper case is always used.
	g	The letter "g" and number nine are identical. See the number "9" for details.
	h	The lower case is preferred to avoid confusion with the letter "K". Letter "H" is occasionally used when it is not ambiguous such as  for hysteresis.
	i	Lower case is always used to avoid confusion with the number "1".
	J	Uupper case is always used.

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H	K	Upper case letter "H" is usually reserved to represent the letter "K" since it is not possible to display a letter "K" with seven segments. See "H" above.
L	L	Upper case is always used to avoid confusion with the number one.
MM	M	The upper case is almost always used, although the Power Series uses nn to represent letter "m" in prompts. This character appears frequently in prompts.
n	n	Lower case is always used. This character appears frequently in prompts.
o,O	o	Lower case is preferred to avoid confusion with number zero, but upper case will be frequently used as the first letter of the prompt such as Out 1.
P	P	Upper case letter is always used.
q	q	Lower case letter is always used. The "q" can be distinguished from the number "9" or letter "g" due to the missing lower segment bar.
r	r	Lower case is always used. Letter "r" appears often in prompts.
S	S	Upper case is always used. It is avoided whenever possible to avoid confusion with the number five.
t	t	This is a hard character for many people to recognize. The lower case is always used. Letter "t" appear frequently in our prompts.
u,U	U	The upper case letter "U" is the preferred character but occasionally, the lower case may be used when it is not ambiguous such as bAud for baud rate.
u	v	When a lower case letter "u" appears, it would normally indicate a letter "v", although some exceptions exist. See the above example.
UU	W	Upper case is always used. It is confusing because it is two LED segments wide.
	X	The letter "X" is not used.
y	y	Always appears as a lower case character. Used frequently in ramping controllers for step type, (StYP).
Z	Z	Upper case letter "Z" is identical to number two. It is rarely used to avoid confusion. The Power Series uses letter "Z" for prompts like PHZt (Phase Angle) and ZonC (Zone Count).
_	Low	Used in the Power Series to indicate low state such as nnA_, which is milliamp low range.
‾	High	Used in the Power Series to indicate high state such as nnA‾,, which is milliamp high range.
-1	-1	Used to for negative values less than -999 down to -1999.

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