

8-bit Instruction	Works with registers	Cycles to execute	Corresponding 16-bit Instruction	Works with registers	Cycles to execute	Description
M_PUSH	0-31	2	W_PUSH	X-Z	4	Putting on and getting from stack
M_POP	0-31	2	W_POP	X-Z	4	
SR_PUSH	-	8				
SR_POP	-	8				
M_ADD	0-31	1	W_ADD	X-Z	2	Addition
M_ADDI	0-30	6	W_ADDI	X-Z	2	
M_ADDC	0-31	1	W_ADDB	X-Z	2	
M_ADDCI	0-30	6	W_INC	X-Z	2	
M_SUB	0-31	1	W_SUB	X-Z	2	Subtraction
M_SUBI	0-30	6	W_SUBI	X-Z	2	
M_SUBC	0-31	1	W_SUBB	X-Z	2	
M_SUBCI	0-30	6	W_DEC	X-Z	2	
			W_COM	X-Z	2	16-bit inversion
			W_NEG	X-Z	4	
			W_CP		2	16-bit comparison
			W_CPI		7	
M_LDI	16-31	1	W_LDI	X-Z	2	Loading constants
M_LDIL	0-15	4				
M_LPM	0-29	13				Loading from program memory
M_IN	0-31	max 2				Loading from registers
M_OUT	0-31	max 2				
M_LDS	0-31	max 2	W_LDS	X-Z	4	Loading from SRAM
M_STS	0-31	max 2	W_STS	X-Z	4	
M_CLR	0-31	1				Bitwise operations on registers
M_SBR	0-30	6	W_CLR	X-Z	2	
M_CBR	0-30	6				
M_IBR	0-30	6				
M_SBI	-	max 7				Bitwise operations on IO registers
M_CBI	-	max 7				
M_IBI	-	max 8				
M_SBRM	0-30	6				Mask bitwise operations
M_CBRM	0-30	7				
M_IBRM	0-30	6				
U_FIFO_READ		max 47				FIFO
U_FIFO_WRITE		47				
U_FIFO_BLOCK_WRITE		51(+17/b)				
U_CIRCBUFFER_READMEAN8		84				Circular buffer
U_CIRCBUFFER_WRITE		24				
U_BIN8TOBCH		max ~70	---	X-Z	max ~220	Encode binary to segment display
U_BIN8TOBCD		max ~50	U_BIN16TOBCD			
U_TABLEENCODE			17			
U_BLOCK_TABLEENCODE		min 26				
U_LCD_INIT	-	~336				LCD HD44780 wrappers
U_LCD_CLR	-	~96				
U_LCD_DDADDR	0-29	~105				
U_LCD_SGADDR	0-29	~105				
U_LCD_DATA	0-29	~105				
U_LCD_BLOCK_DATA	-	?				