

9318 93L18

8-INPUT PRIORITY ENCODER

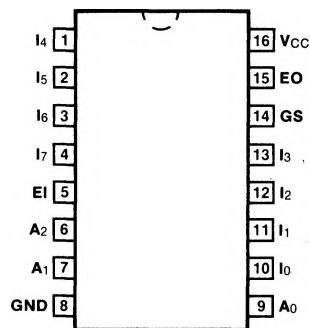
DESCRIPTION — The '18 multipurpose encoders are designed to accept eight inputs and produce a binary weighted code of the highest order input.

- **MULTIFUNCTION CAPABILITY**
 - CODE CONVERSIONS
 - MULTI-CHANNEL D/A CONVERTER
 - DECIMAL TO BCD CONVERTER
- **CASCADING FOR PRIORITY ENCODING OF N BITS**
- **INPUT ENABLE CAPABILITY**
- **PRIORITY ENCODING — AUTOMATIC SELECTION OF HIGHEST PRIORITY INPUT LINE**
- **OUTPUT ENABLE — ACTIVE LOW WHEN ALL INPUTS HIGH**
- **GROUP SIGNAL OUTPUT — ACTIVE WHEN ANY INPUT IS LOW**

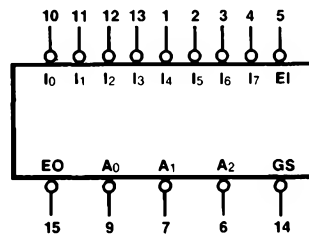
ORDERING CODE: See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		V _{CC} = +5.0 V ±5%, T _A = 0° C to +70° C	V _{CC} = +5.0 V ±10%, T _A = -55° C to +125° C	
Plastic DIP (P)	A	9318PC, 93L18PC		9B
Ceramic DIP (D)	A	9318DC, 93L18DC	9318DM, 93L18DM	6B
Flatpak (F)	A	9318FC, 93L18FC	9318FM, 93L18FM	4L

CONNECTION DIAGRAM PINOUT A



LOGIC SYMBOL



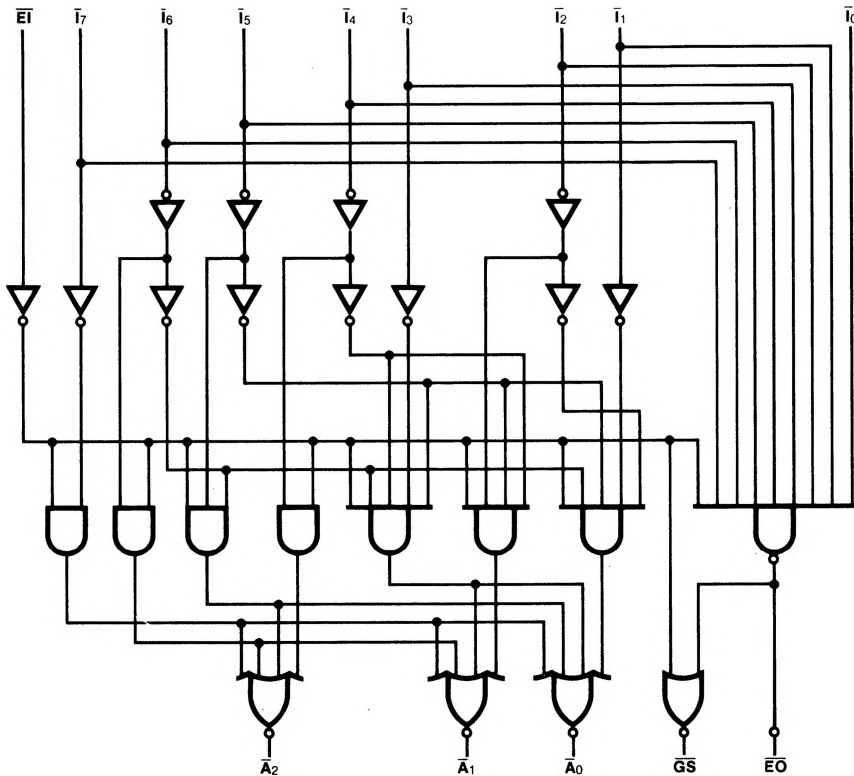
V_{CC} = Pin 16
GND = Pin 8

INPUT LOADING/FAN-OUT: See Section 3 for U.L. definitions

PIN NAMES	DESCRIPTION	93XX (U.L.) HIGH/LOW	93L (U.L.) HIGH/LOW
\bar{I}_0	Priority Input (Active LOW)	1.0/1.0	0.5/0.25
$\bar{I}_1 - \bar{I}_7$	Priority Inputs (Active LOW)	2.0/2.0	1.0/0.5
\bar{EI}	Enable Input (Active LOW)	2.0/2.0	1.0/0.5
\bar{EO}	Enable Output (Active LOW)	20/10	10/5.0 (3.0)
\bar{GS}	Group Select Output (Active LOW)	20/10	10/5.0 (3.0)
$\bar{A}_0 - \bar{A}_2$	Address Outputs (Active LOW)	20/10	10/5.0 (3.0)

FUNCTIONAL DESCRIPTION — The '18 8-input priority encoder accepts data from eight active LOW inputs and provides a binary representation on the three active LOW outputs. A priority is assigned to each input so that when two or more inputs are simultaneously active, the input with the highest priority is represented on the output, with input line 7 having the highest priority. A HIGH on the Enable Input (\bar{E}_1) will force all outputs to the inactive (HIGH) state and allow new data to settle without producing erroneous information at the outputs. A Group Signal output (\bar{G}_S) and Enable Output (\bar{E}_O) are provided with the three data outputs. The \bar{G}_S is active LOW when any input is LOW; this indicates when any input is active. The \bar{E}_O is active LOW when all inputs are HIGH. Using the output enable along with the input enable allows priority encoding of N input signals. Both \bar{E}_O and \bar{G}_S are in the inactive HIGH state when the input enable is HIGH.

LOGIC DIAGRAM



TRUTH TABLE

INPUTS									OUTPUTS				
\overline{EI}	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	\overline{GS}	$\overline{A_0}$	$\overline{A_1}$	$\overline{A_2}$	\overline{EO}
H	X	X	X	X	X	X	X	X	H	H	H	H	H
L	H	H	H	H	H	H	H	H	H	H	H	H	L
L	X	X	X	X	X	X	X	L	L	L	L	L	H
L	X	X	X	X	X	X	L	H	L	H	L	L	H
L	X	X	X	X	X	L	H	H	L	H	H	L	H
L	X	X	X	L	H	H	H	H	L	L	L	H	H
L	X	X	L	H	H	H	H	H	L	H	L	H	H
L	X	L	H	H	H	H	H	H	L	L	H	H	H
L	L	H	H	H	H	H	H	H	L	H	H	H	H

H = HIGH Voltage Level

L = LOW Voltage Level

X = Immaterial

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

SYMBOL	PARAMETER	93XX		93L		UNITS	CONDITIONS
		Min	Max	Min	Max		
I_{IH}	Input HIGH Current $I_0 - I_7, \overline{EI}$	1.0				mA	$V_{CC} = \text{Max}, V_{IN} = 5.5 \text{ V}$
I_{OS}	Output Short Circuit Current	-20	-70			mA	$V_{CC} = \text{Max}, V_{OUT} = 0 \text{ V}$
I_{CC}	Power Supply Current	77		22		mA	$V_{CC} = \text{Max}$

AC CHARACTERISTICS: $V_{CC} = +5.0 \text{ V}, T_A = +25^\circ \text{ C}$ (See Section 3 for waveforms and load configurations)

SYMBOL	PARAMETER	93XX		93L		UNITS	CONDITIONS
		$C_L = 15 \text{ pF}$		$C_L = 15 \text{ pF}$			
		Min	Max	Min	Max		
t_{PLH} t_{PHL}	Propagation Delay T_n to \overline{EO}	10 18		18 50		ns	Figs. 3-1, 3-4
t_{PLH} t_{PHL}	Propagation Delay \overline{EI} to \overline{GS}	14 16		20 28		ns	Figs. 3-1, 3-5
t_{PLH} t_{PHL}	Propagation Delay \overline{EI} to \overline{EO}	14 22		20 36		ns	Figs. 3-1, 3-5
t_{PLH} t_{PHL}	Propagation Delay \overline{EI} to $\overline{A_n}$	17 17		33 26		ns	Figs. 3-1, 3-5
t_{PLH} t_{PHL}	Propagation Delay T_n to \overline{GS}	14 16		60 26		ns	Figs. 3-1, 3-5
t_{PLH} t_{PHL}	Propagation Delay T_n to $\overline{A_n}$	21 21		36 36		ns	Figs. 3-1, 3-20