5. Binary Relays

Early digital relays, such as the Alstom K series, use a binary logic scheme to assign outputs and input functions. Actually, all digital relays use this logic scheme in some fashion but have an additional user interface to add labels and help the user. All entries in the binary scheme are ON (1) or OFF (0) and assigning an ON (1) in any cell turns that function on. The output relays or logic columns are typically arranged in multiples of eight and start with the number 0. Columns are arranged in order from right to left. An example of a binary scheme is shown in Figure 16-29. The functions to be assigned are usually arranged in columns with elements in rows. The element's function is assigned to the corresponding output in the "Relay Masks" row by entering ON (1) where the appropriate column and row intersect. In the following example,

- Output 0 will operate when elements to>>>, t>>>, or tV< operates
- Output 2 will operate when elements to>, to>>, tA>, tB>, tC>, or t>>operate.

REl Ay MASKS	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
Io> Fwd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Io> Rev	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
to>	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0
to>>	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0
to>>>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
I> Fwd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I> Rev	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tA>	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0
tB>	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0
tC>	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0
t>>	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0
t>>>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
CB Trip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CB Close	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CB Fail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aux 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aux 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aux 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tV<	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Level 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Level 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Level 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
thAlarm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
thTrip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CB Alarm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 16-29: Example of Simple Binary Logic Scheme