

User Instructions for The VIP-411 & VIP-412 "SmartAe"™ Switch to ASCII Encoders

DESCRIPTION

The VIP-411 and VIP-412 "SmartAe" Encoders convert switch inputs to RS-232 protocol ASCII codes. Switch inputs can be individual closures to ground (Model VIP-411), or matrix closures (Model VIP-412). The Model VIP-411 allows a maximum of 24 contact closures to ground while the VIP-412 allows a maximum of 128 matrix closures in a 8 by 16 arrangement. A fewer number of contact closures will also be accommodated by either model. Both models receive power from an external +5Vdc power source. The VIP-210 wall mount +5Vdc Power Supply is recommended and must be ordered separately.

OPERATION

Make/Break - Switch closures are debounced. The designed ASCII code for the closed switch is sent on the RS-232 output when a switch closure is detected. No code is sent when the switch is opened.

Multiple Closures - Multiple switches can be closed simultaneously. One "make" code is sent for each closed switch. The sequence, in which codes are sent depends on the switch scan sequence. Therefore, it is possible that codes may be sent in an order different from the closure order, if the switches are closed within 100 microseconds of each other.

GENERATED CODES

Table 1 shows the standard RS-232 protocol ASCII codes which are sent when the Model VIP-411 detects a switch closure to common. Table 2 shows which ASCII codes are sent from the VIP-412 when contact closures are detected. Other mappings for either model are available on special order.

RS-232 CHARACTERISTICS

The "SmartAe" transmits one start bit, 8 data bits, no parity, and one stop bit. A user selectable dip switch, located on the printed circuit board, allows selection of the RS-232 output baud rate to be 9600, 4800, 2400, or 1200. The Baud Rate Selection Diagram (see page 2) shows the switch settings to select baud rates. 9600 baud is the factory setting.

The RS-232 port is a male DB-9 connector designated as P2. Pin 3 is Transmitted data (VIP-411 & VIP-412 send data on this pin). Pin 5 is Signal Ground.

SWITCH INPUTS

Switch closures are accepted on J1, a 26 pin double row, (0.1) in contact spacing, ribbon cable header.

ENCLOSURE

Both the VIP-411 & VIP-412 units are housed in a plastic enclosure, and are powered by an external +5 Vdc power source. The VIP-210 wall mounted 5 Vdc 0.3 amp power supply is recommended and may be ordered from Vetra separately.

OEM VERSION (Board level only)

Both the VIP-411 and VIP-412 come in an OEM version. When ordered in an OEM version, there is no enclosure, and no front and rear panels. RS-232 signals are available at the header marked "P1", or the connector marked "P2". Below is the pin out information for P1 and P2. All signals are referenced from the host source and not from the "SmartAe".



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VIP-410 (PC Board)

DB-9 Connector

(Complete Unit)

P1-1 TXD
P1-2 RTS
P1-3 GND
P1-4 GND
P1-5 CTS
P1-6 RXD

P2-2
P2-7

P2-5
P2-7
P2-1

BAUD RATE SELECTION DIAGRAM - SW1 SETTINGS

	BAUD RATE = 9600	BAUD RATE = 4800	BAUD RATE = 2400	BAUD RATE = 1200
UP		X	X	X X
DOWN	X X X X	X X X	X X X	X X
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

VIP-411 CODE MAP

J2 PINS	TRANSMITTED CHARACTER	HEX	J2 PINS	TRANSMITTED CHARACTER	HEX
1	SPACE	20	13	B	42
2	0	30	14	C	43
3	1	31	15	D	44
4	2	32	16	E	45
5	3	33	17	F	46
6	4	34	18	G	47
7	5	35	19	H	48
8	6	36	20	I	49
9	7	37	21	J	4A
10	8	38	22	K	4B
11	9	39	23	LF	0A
12	A	41	24	CR	0C

Pins 25 & 26 are common. The above codes are generated when contact is made between any one pin (1-24) and common (25 or 26).

TABLE 1

VIP-412 CODE MAP

J2 PINS	1	2	3	4	5	6	7	8
9	B	A	9	8	+	I	T)
10	7	6	5	4	BKSP	H	S	(
11	3	2	1	0	CR	G	R	'
12	F	E	D	C	-	J	U	,
13	/	ESC	SPACE	F	*	K	V	.
14	O	N	M	L	P	Q	W	:
15	!	Z	Y	X	"	\$	%	;
16	?	>	=	<	\	^	&	@
17	a	b	C	d	e	f	g	h
18	i	j	K	l	m	n	o	p
19	q	r	S	t	u	v	w	x
20	y	z	01H	02H	03H	04H	05H	06H
21	07H	08H	09H	0AH	0BH	0CH	0DH	0EH
22	0FH	10H	11H	12H	13H	14H	15H	16H
23	17H	18H	19H	1AH	1BH	1CH	1DH	1EH
24	1FH	20H	21H	22H	23H	24H	25H	26H

TABLE 2

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