Tension Reducer (PRB) for 8-control Solenoid Valves - 758 Series

PRB (Power Reduction Board) scheme, expressly developed for 758 Series, 8 control models, allows a significated reduction of the solenoid valve power consumption and optimises its use temperature even in particularly difficult use conditions, such as:

- use with non-stabilized tensions
- use in high temperature environments
- continuative use with 100%-duty-cycle

PRB circuit is totally transparent to control driver of the valve and it intervenes in the case in which control times exceed 100 ms, by providing the coil with a resistance in series with consequent reduction of feeding tension. Considering the low value of the required tension to keep the valve open, the dissipation on the resistance results extremely reduced.

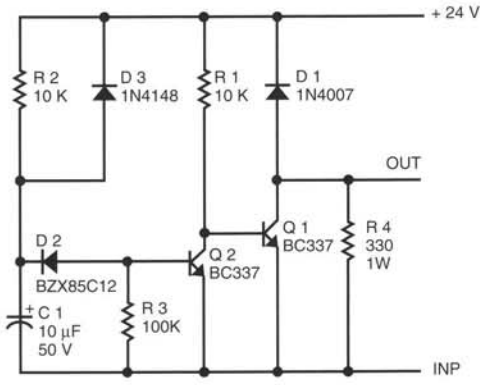
Marginal note

1. PRB circuit limits solenoid valves maximum operative frequency to 20 Hz.
2. PRB circuit is not consistent with solenoid valves equipped with anti-disturbance diodes.

PRB circuit incidence on the power dissipated by solenoid valves

Model		VDC	Dissipated power (single coil)	
Solenoid Valves	□□□7588□□□□24	24	without PRB	1.25 W
Solenoid Valves	□□□7588□□□□24	24	with PRB	0.42 W
Solenoid Valves	□□□7588□□□□JJ	24	without PRB	1.9 W
Solenoid Valves	□□□7588□□□□JJ	24	with PRB	0.65 W

PRB Circuit, electric scheme



How to order PRB driver board - Available

The PRB driver boards are suitable for all models of 8-control, 24 VDC version 758 Series.

Model		VDC	No. Channels	No. connetable Solenoid valves	(PRB) Driver Board Code
Solenoid Valves	□□□7588□□□□24	24	48	6	560.072 G
Solenoid Valves	□□□7588□□□□24	24	40	5	560.107 P
Solenoid Valves	□□□7588□□□□24	24	32	4	560.108 Q
Solenoid Valves	□□□7588□□□□JJ	24	48	6	560.092 A
Solenoid Valves	□□□7588□□□□JJ	24	40	5	560.105 N
Solenoid Valves	□□□7588□□□□JJ	24	32	4	560.106 O

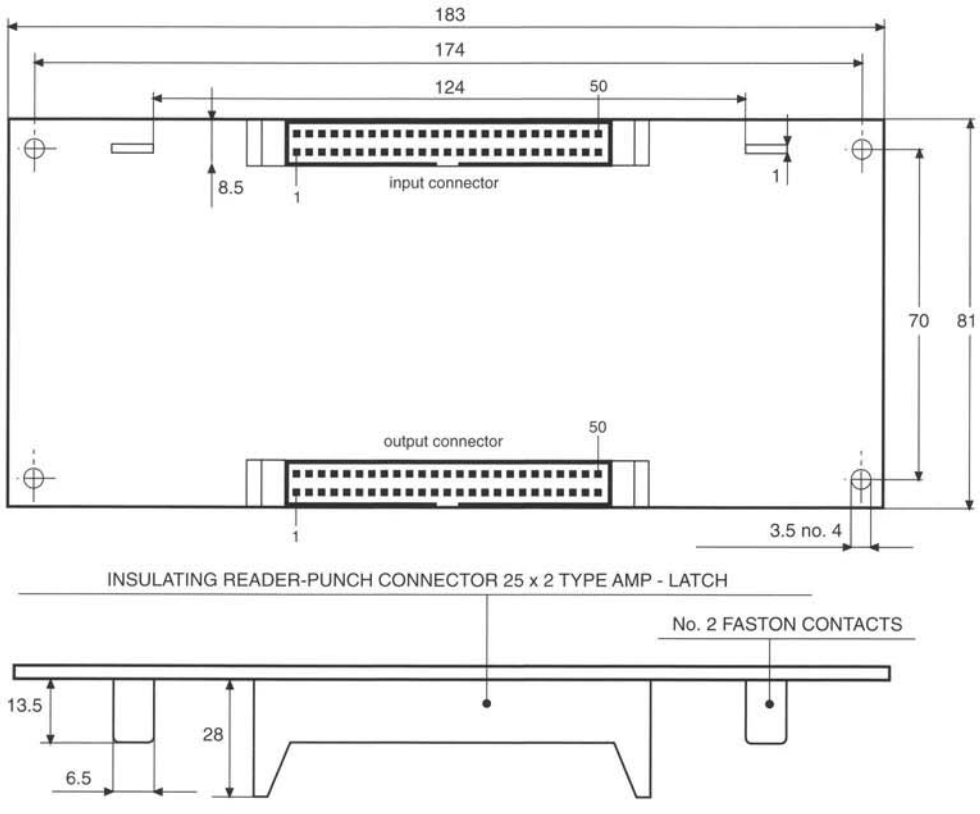
CONNECTOR INPUT 50 PIN

1 • Valve 1	Input 1	26 • Valve 4	Input 2
2 • Valve 1	Input 2	27 • Valve 4	Input 3
3 • Valve 1	Input 3	28 • Valve 4	Input 4
4 • Valve 1	Input 4	29 • Valve 4	Input 5
5 • Valve 1	Input 5	30 • Valve 4	Input 6
6 • Valve 1	Input 6	31 • Valve 4	Input 7
7 • Valve 1	Input 7	32 • Valve 4	Input 8
8 • Valve 1	Input 8	33 • Valve 5	Input 1
9 • Valve 2	Input 1	34 • Valve 5	Input 2
10 • Valve 2	Input 2	35 • Vaive 5	Input 3
11 • Valve 2	Input 3	36 • Valve 5	Input 4
12 • Valve 2	Input 4	37 • Valve 5	Input 5
13 • Valve 2	Input 5	38 • Valve 5	Input 6
14 • Valve 2	Input 6	39 • Valve 5	Input 7
15 • Valve 2	Input 7	40 • Valve 5	Input 8
16 • Valve 2	Input 8	41 • Valve 6	Input 1
17 • Valve 3	Input 1	42 • Valve 6	Input 2
18 • Valve 3	Input 2	43 • Valve 6	Input 3
19 • Valve 3	Input 3	44 • Valve 6	Input 4
20 • Valve 3	Input 4	45 • Valve 6	Input 5
21 • Valve 3	Input 5	46 • Valve 6	Input 6
22 • Valve 3	Input 6	47 • Valve 6	Input 7
23 • Valve 3	Input 7	48 • Valve 6	Input 8
24 • Valve 3	Input 8	49 • —	
25 • Valve 4	Input 1	50 • —	

CONNECTOR OUTPUT 50 PIN

1 • Valve 1	Output Control 1	26 • Valve 4	Output Control 2
2 • Valve 1	Output Control 2	27 • Valve 4	Output Control 3
3 • Valve 1	Output Control 3	28 • Valve 4	Output Control 4
4 • Valve 1	Output Control 4	29 • Valve 4	Output Control 5
5 • Valve 1	Output Control 5	30 • Valve 4	Output Control 6
6 • Valve 1	Output Control 6	31 • Valve 4	Output Control 7
7 • Valve 1	Output Control 7	32 • Valve 4	Output Control 8
8 • Valve 1	Output Control 8	33 • Valve 5	Output Control 1
9 • Valve 2	Output Control 1	34 • Valve 5	Output Control 2
10 • Valve 2	Output Control 2	35 • Valve 5	Output Control 3
11 • Valve 2	Output Control 3	36 • Valve 5	Output Control 4
12 • Valve 2	Output Control 4	37 • Valve 5	Output Control 5
13 • Valve 2	Output Control 5	38 • Valve 5	Output Control 6
14 • Valve 2	Output Control 6	39 • Valve 5	Output Control 7
15 • Valve 2	Output Control 7	40 • Valve 5	Output Control 8
16 • Valve 2	Output Control 8	41 • Valve 6	Output Control 1
17 • Valve 3	Output Control 1	42 • Valve 6	Output Control 2
18 • Valve 3	Output Control 2	43 • Valve 6	Output Control 3
19 • Valve 3	Output Control 3	44 • Valve 6	Output Control 4
20 • Valve 3	Output Control 4	45 • Valve 6	Output Control 5
21 • Valve 3	Output Control 5	46 • Valve 6	Output Control 6
22 • Valve 3	Output Control 6	47 • Valve 6	Output Control 7
23 • Valve 3	Output Control 7	48 • Valve 6	Output Control 8
24 • Valve 3	Output Control 8	49 • —	
25 • Valve 4	Output Control 1	50 • —	

PRB Scheme, Size and Connections



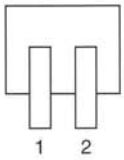
Electrical characteristics

Nominal control tension	24 VDC	Maximum frequency use	20 Hz
Minimun control tension	21.6 VDC	Shutdown diode	Included
Attivation time of riductor	2 sec.		

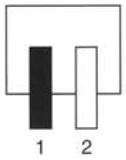
9-Channel Driver Board PCM 8130

The 9-channel driver board PCM 8130 is prearranged for the control of the proportional flow solenoid valves of 860 PCM Series. Said driver board my be setup through two dip-switches both for the control of 6- bit models with 64 conductance levels, and for the control of 8-bit models with 256 conductance levels.
The driver board accepts either 6- and 8-digital signals with direct input, or 0-10 V tension signals, subsequently converted into binary code. Said drive board may be integrated in a suitable protection box , which makes easier its installation (see 9-channel Driver Box PCM).

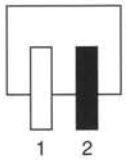
DIP - SWITCH SETTING



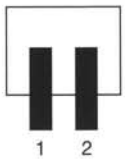
6 bit resolution
Solenoid valve control through digital input (channels)



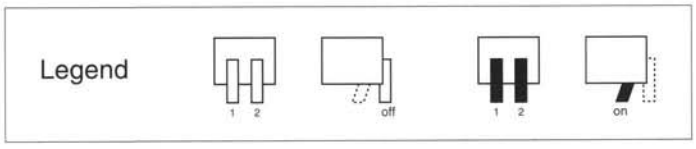
8 bit resolution
Solenoid valve control through digital input (channels)



6 bit resolution
Solenoid valve control through analogic input (0+10 V)



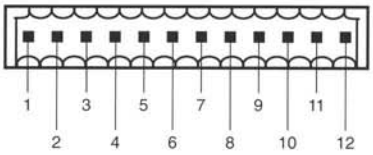
8 bit resolution
Solenoid valve control through analogic input (0+10 V)



Electrical characteristics	
Supply voltage	24 VDC ± 10 %
Absorbtion current	20 mA (when all s.v. closed)
Input tension for s.v. control (single channel)	5 ÷ 32 VCD
Input current for s.v. control (single channel)	3 ÷ 25 mA

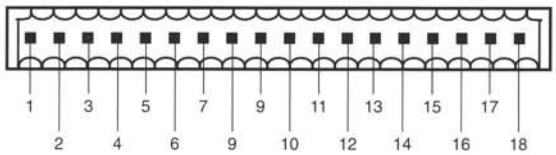
9-Channel Driver Board PCM 8130

12-POLE TERMINAL BLOCK CONNECTOR

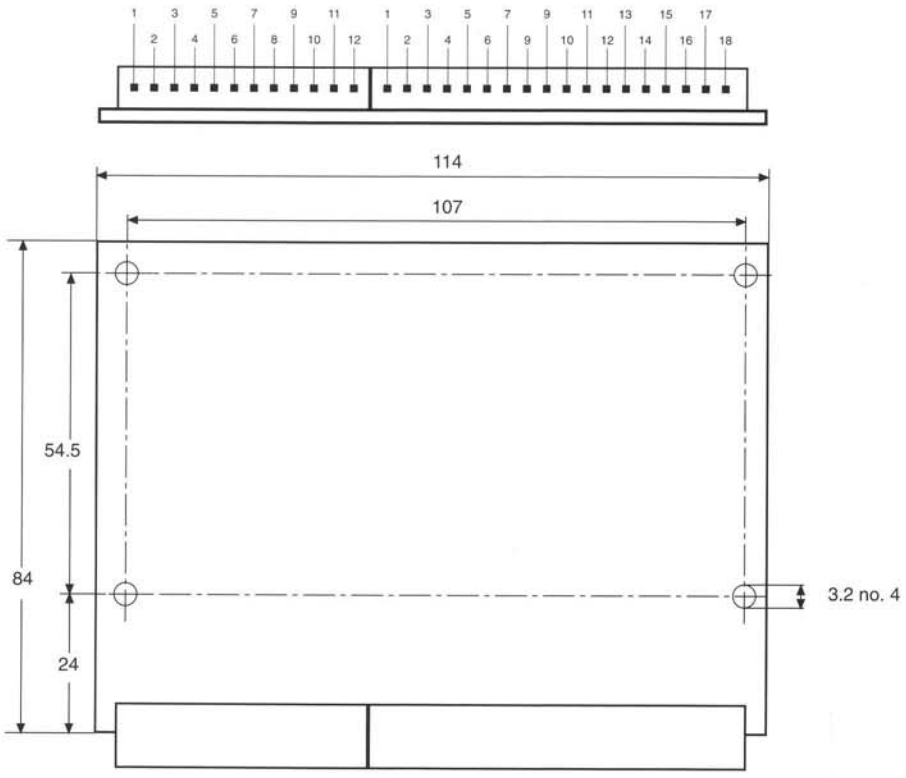


1 • Valve 9 Output control	
2 • Valve 8 Output control	
3 • Valve 7 Output control	
4 • Valve 6 Output control	
5 • Valve 5 Output control	
6 • Valve 4 Output control	
7 • Valve 3 Output control	
8 • Valve 2 Output control	
9 • Valve 1 Output control	
10 • Valve Common	
11 • Valve Common	
12 • Valve Common	

18-POLE TERMINAL BLOCK CONNECTOR



1 • + Supply	15 • —
2 • – Supply	16 • —
3 • + Channel 1 Input	17 • —
4 • + Channel 2 Input	18 • —
5 • + Channel 3 Input	
6 • + Channel 4 Input	
7 • + Channel 5 Input	
8 • + Channel 6 Input	
9 • + Channel 7 Input	
10 • + Channel 8 Input	
11 • – Channels Input	
12 • Output 10 VDC	
13 • Input control in tension 0 ÷ 10 VDC	
14 • —	



8-Channel Universal Driver Board

The 8-channel universal driver board is suitable for the pilot driving of a wide range of Matrix solenoid valves both in on-off modality, and in speed-up modality

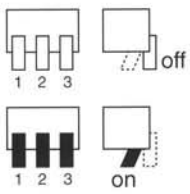
In on-off modality the driver board automatically provides to reduce the tension value after the SV opening phase, reducing in such a way its consumption and thermal dissipation.
In speed-up modality the care and precision of the electric control assure the best working conditions to the Solenoid valve and optimize its performance.

The arrangement of the driver board to the different SV features (configuration change) is easily performed by the user through the setup of three dip-switches, which are present therein.

The universal driver board is available with some different connection typologies. D-Sub and terminal board types may be integrated in a suitable protection box, facilitating their installation (see 8-Channel Universal Driver Box).

SETTING DIP - SWITCH

Solenoid Valve / Series	DIP - SWITCH
8 2 0 XX	
8 2 0 KK	
(1) 8 5 0 9 XX	
(1) 8 5 0 9 KK	
7 5 0 8 XX	
7 5 0 8 KK	
7 2 0 24	
7 5 0 8 24	
8 2 0 24	
(1) 8 5 0 9 24	

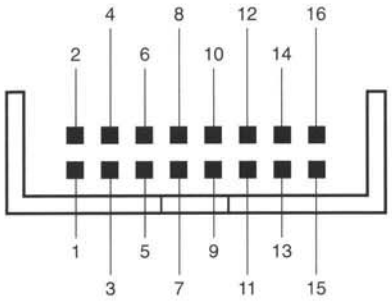


(1) - Only 8 channels connectable (no connection for the ninth channel)

Electrical characteristics	
Supply voltage	24 VDC ± 10%
Absorbtion current	20 mA (when all s.v. closed)
Maximum frequency piloting	200 Hz
Input tension for s.v. control (single channel)	5 ÷ 32 VCD
Input current for s.v. control (single channel)	3 ÷ 25 mA
Control	NPN or PNP type

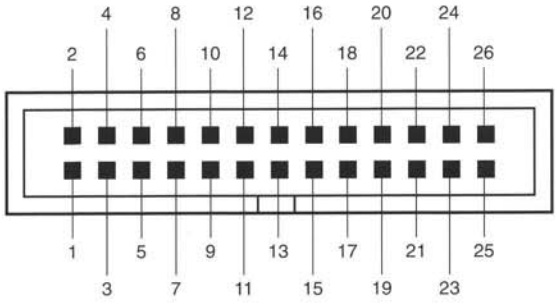
8-Channel Universal Driver Board UDB 8010

AMP MODU II CONNECTOR

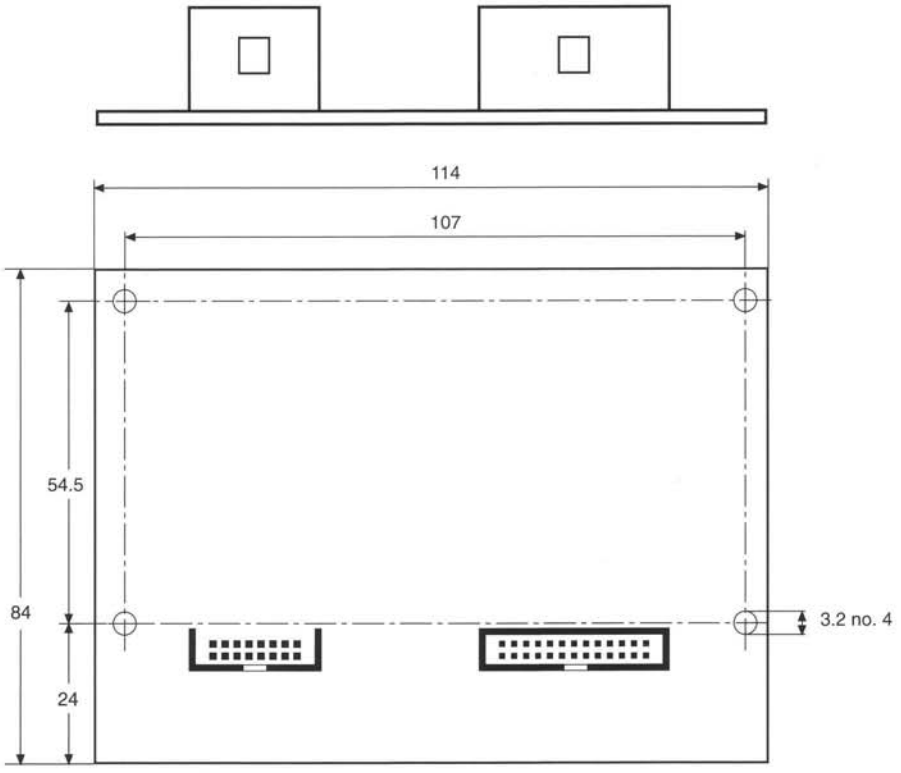


1 • Valve 8 Output control	
2 • Valve 7 Output control	
3 • Valve 6 Output control	
4 • Valve 5 Output control	
5 • Valve 4 Output control	
6 • Valve 3 Output control	
7 • Valve 2 Output control	
8 • Valve 1 Output control	
9 • Valve Common	
10 • Valve Common	
11 • Valve Common	
12 • Valve Common	
13 • —	
14 • —	
15 • —	
16 • —	

AMP LATCH 13 x 2 CONNECTOR

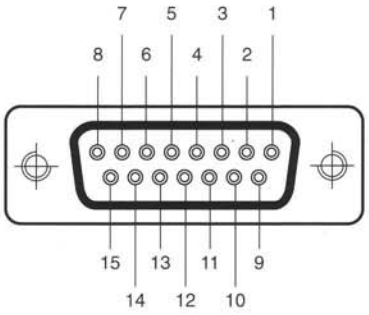


1 • + Supply	17 • – Channel 4 Input
2 • + Supply	18 • + Channel 4 Input
3 • – Supply	19 • – Channel 5 Input
4 • – Supply	20 • + Channel 5 Input
5 • – Supply	21 • – Channel 6 Input
6 • – Supply	22 • + Channel 6 Input
7 • – Supply	23 • – Channel 7 Input
8 • – Supply	24 • + Channel 7 Input
9 • – Supply	25 • – Channel 8 Input
10 • – Supply	26 • + Channel 8 Input
11 • – Channel 1 Input	
12 • + Channel 1 Input	
13 • – Channel 2 Input	
14 • + Channel 2 Input	
15 • – Channel 3 Input	
16 • + Channel 3 Input	



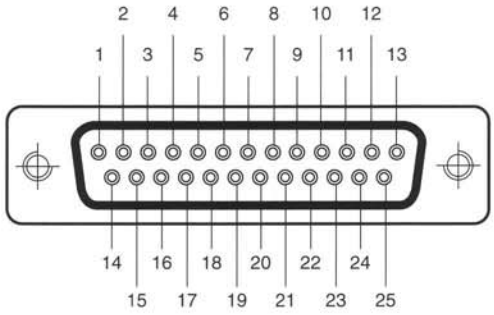
8-Channel Universal Driver Board UDB 8020

15-POSITION D-SUB CONNECTOR

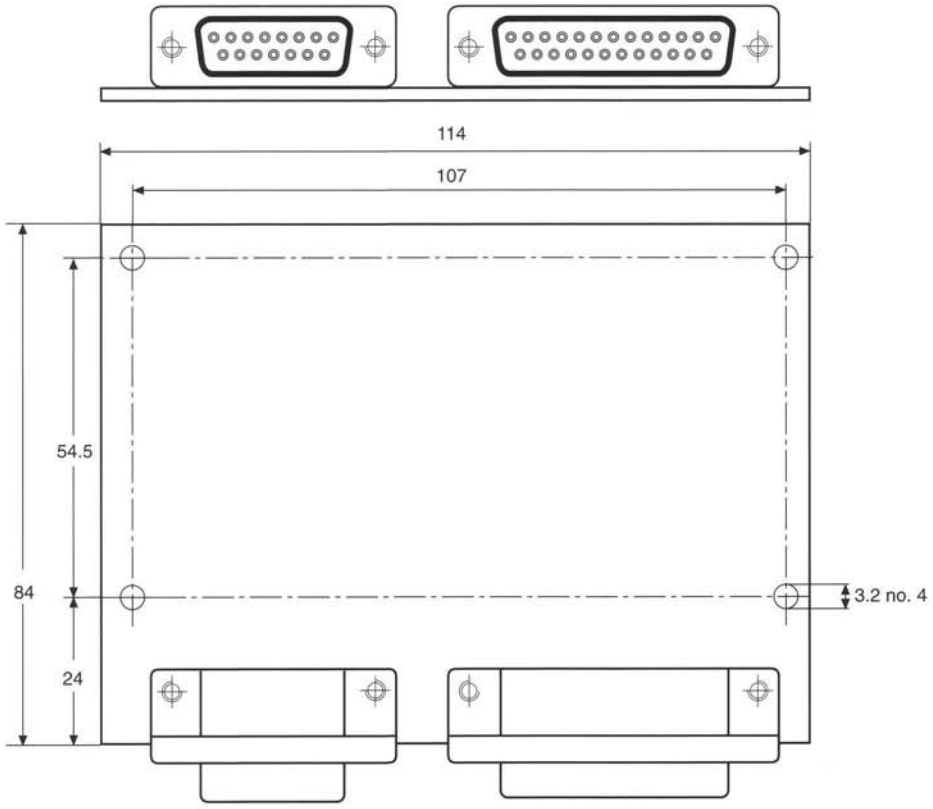


1 • Valve 1 Output control	
2 • Valve 2 Output control	
3 • Valve 3 Output control	
4 • Valve 4 Output control	
5 • Valve 5 Output control	
6 • Valve 6 Output control	
7 • Valve 7 Output control	
8 • Valve 8 Output control	
9 • Valve Common	
10 • Valve Common	
11 • Valve Common	
12 • Valve Common	
13 • —	
14 • —	
15 • —	

25-POSITION D-SUB CONNECTOR

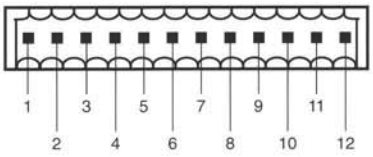


1 • + Supply	17 • – Supply
2 • + Supply	18 • – Channel 1 Input
3 • – Supply	19 • – Channel 2 Input
4 • – Supply	20 • – Channel 3 Input
5 • + Channel 1 Input	21 • – Channel 4 Input
6 • + Channel 2 Input	22 • – Channel 5 Input
7 • + Channel 3 Input	23 • – Channel 6 Input
8 • + Channel 4 Input	24 • – Channel 7 Input
9 • + Channel 5 Input	25 • – Channel 8 Input
10 • + Channel 6 Input	
11 • + Channel 7 Input	
12 • + Channel 8 Input	
13 • —	
14 • + Supply	
15 • + Supply	
16 • – Supply	



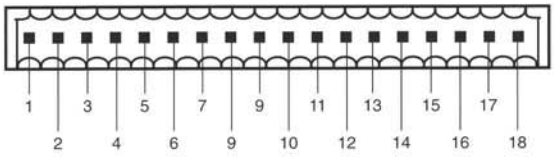
8-Channel Universal Driver Board UDB 8030

12-POLE TERMINAL BLOCK CONNECTOR

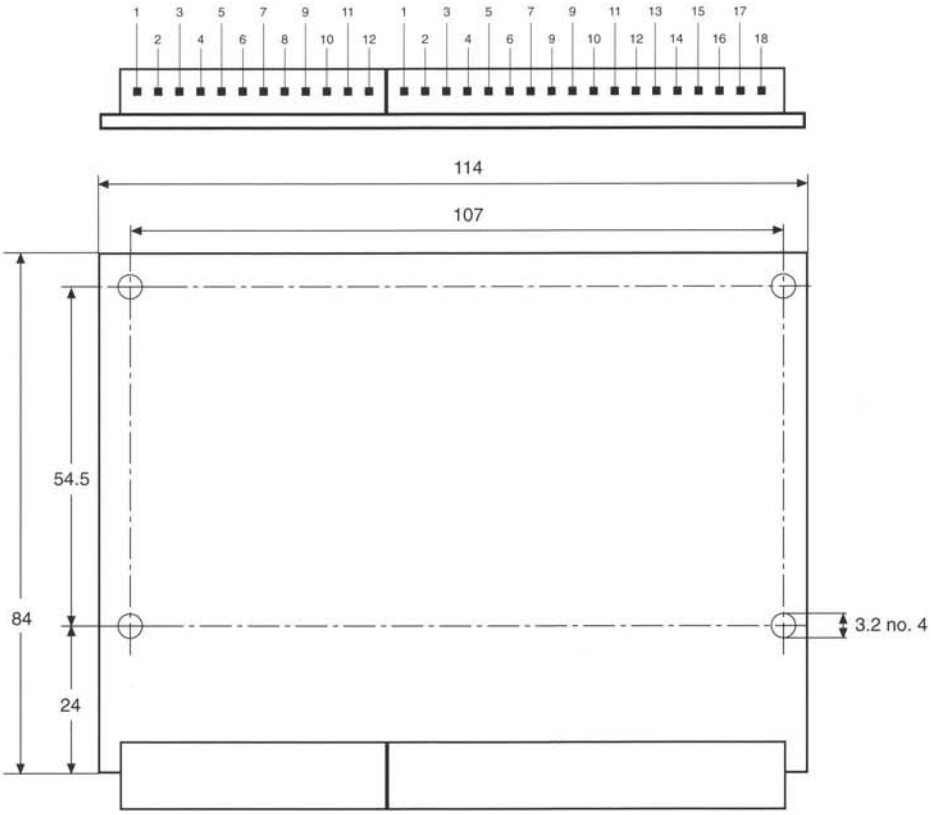


1 • Valve 8 Output control
2 • Valve 7 Output control
3 • Valve 6 Output control
4 • Valve 5 Output control
5 • Valve 4 Output control
6 • Valve 3 Output control
7 • Valve 2 Output control
8 • Valve 1 Output control
9 • Valve Common
10 • Valve Common
11 • Valve Common
12 • Valve Common

18-POLE TERMINAL BLOCK CONNECTOR

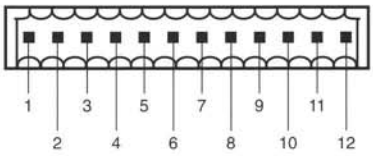


1 • + Supply	15 • + Channel 7 Input
2 • – Supply	16 • – Channel 7 Input
3 • + Channel 1 Input	17 • + Channel 8 Input
4 • – Channel 1 Input	18 • – Channel 8 Input
5 • + Channel 2 Input	
6 • – Channel 2 Input	
7 • + Channel 3 Input	
8 • – Channel 3 Input	
9 • + Channel 4 Input	
10 • – Channel 4 Input	
11 • + Channel 5 Input	
12 • – Channel 5 Input	
13 • + Channel 6 Input	
14 • – Channel 6 Input	



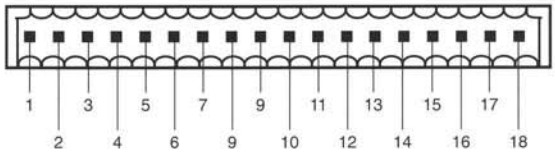
9-Channel Driver Box PCM 8630

12-POLE TERMINAL BLOCK CONNECTOR

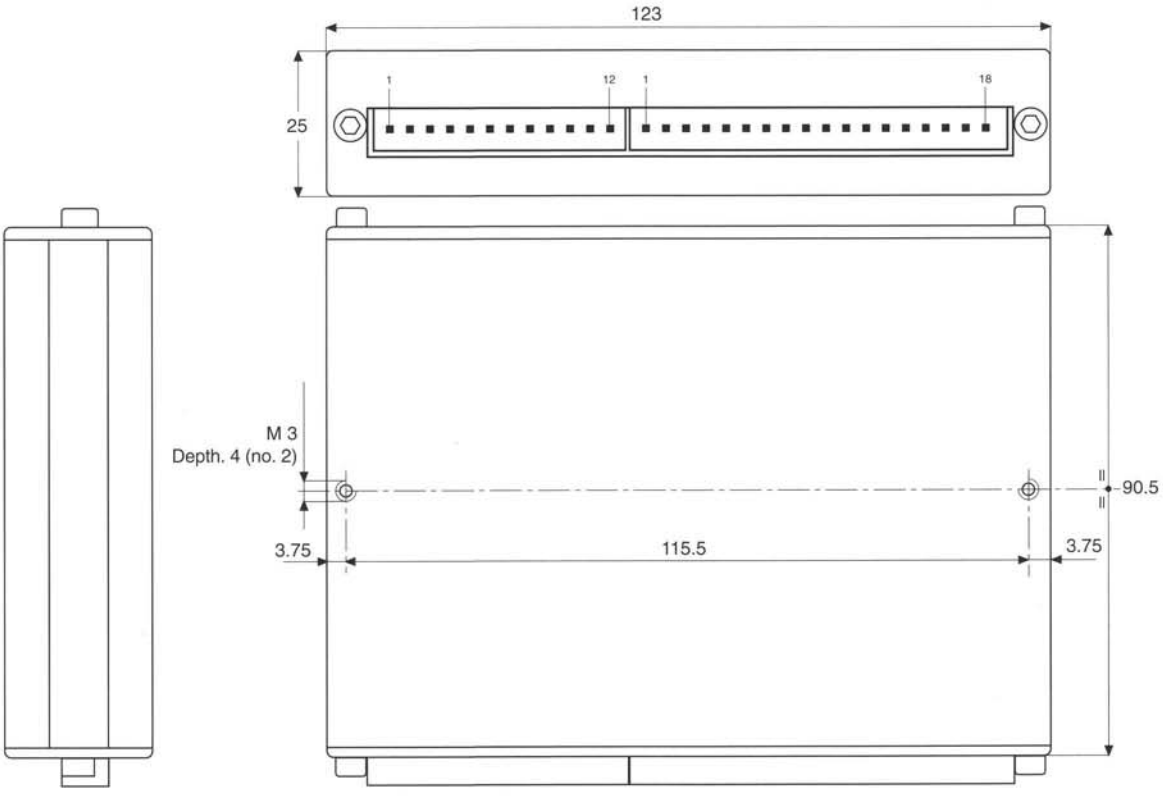


1 • Valve 9 Output control	
2 • Valve 8 Output control	
3 • Valve 7 Output control	
4 • Valve 6 Output control	
5 • Valve 5 Output control	
6 • Valve 4 Output control	
7 • Valve 3 Output control	
8 • Valve 2 Output control	
9 • Valve 1 Output control	
10 • Valve Common	
11 • Valve Common	
12 • Valve Common	

18-POLE TERMINAL BLOCK CONNECTOR

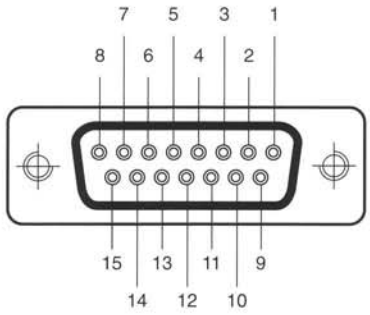


1 • + Supply	15 • —
2 • – Supply	16 • —
3 • + Channel 1 Input	17 • —
4 • + Channel 2 Input	18 • —
5 • + Channel 3 Input	
6 • + Channel 4 Input	
7 • + Channel 5 Input	
8 • + Channel 6 Input	
9 • + Channel 7 Input	
10 • + Channel 8 Input	
11 • – Channels Input	
12 • Outlet 10 VDC	
13 • Input control for tension 0 ÷ 10 VDC	
14 • —	



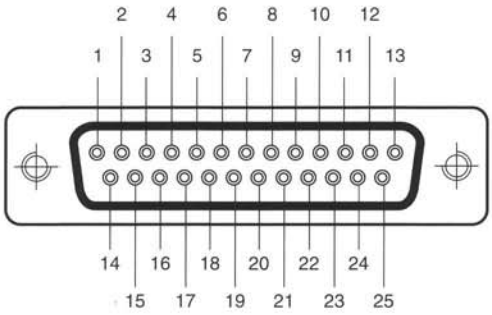
8-Channel Universal Driver Board UDB 8520

15-POSITION D-SUB CONNECTOR

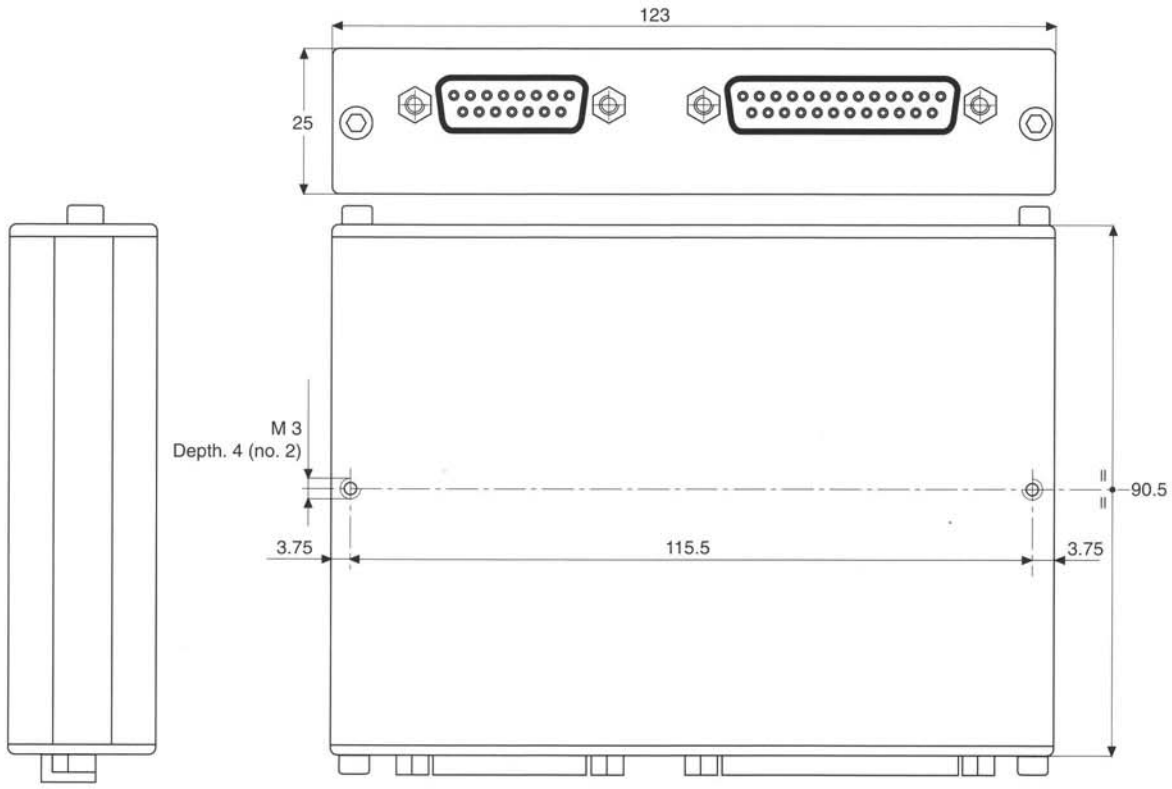


1 • Valve 1 Output control	
2 • Valve 2 Output control	
3 • Valve 3 Output control	
4 • Valve 4 Output control	
5 • Valve 5 Output control	
6 • Valve 6 Output control	
7 • Valve 7 Output control	
8 • Valve 8 Output control	
9 • Valve Common	
10 • Valve Common	
11 • Valve Common	
12 • Valve Common	
13 • —	
14 • —	
15 • —	

25-POSITION D-SUB CONNECTOR



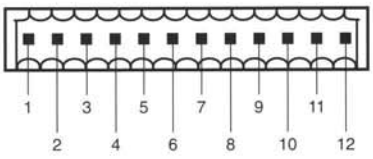
1 • + Supply	17 • – Supply
2 • + Supply	18 • – Channel 1 Input
3 • – Supply	19 • – Channel 2 Input
4 • – Supply	20 • – Channel 3 Input
5 • + Channel 1 Input	21 • – Channel 4 Input
6 • + Channel 2 Input	22 • – Channel 5 Input
7 • + Channel 3 Input	23 • – Channel 6 Input
8 • + Channel 4 Input	24 • – Channel 7 Input
9 • + Channel 5 Input	25 • – Channel 8 Input
10 • + Channel 6 Input	
11 • + Channel 7 Input	
12 • + Channel 8 Input	
13 • —	
14 • + Supply	
15 • + Supply	
16 • – Supply	



ELECTRONIC DRIVER BOARDS

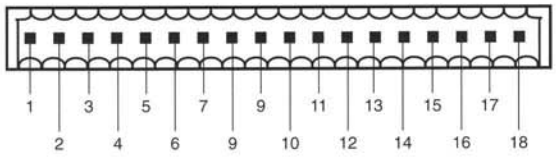
8-Channel Universal Driver Board UDB 8530

12-POLE TERMINAL BLOCK CONNECTOR

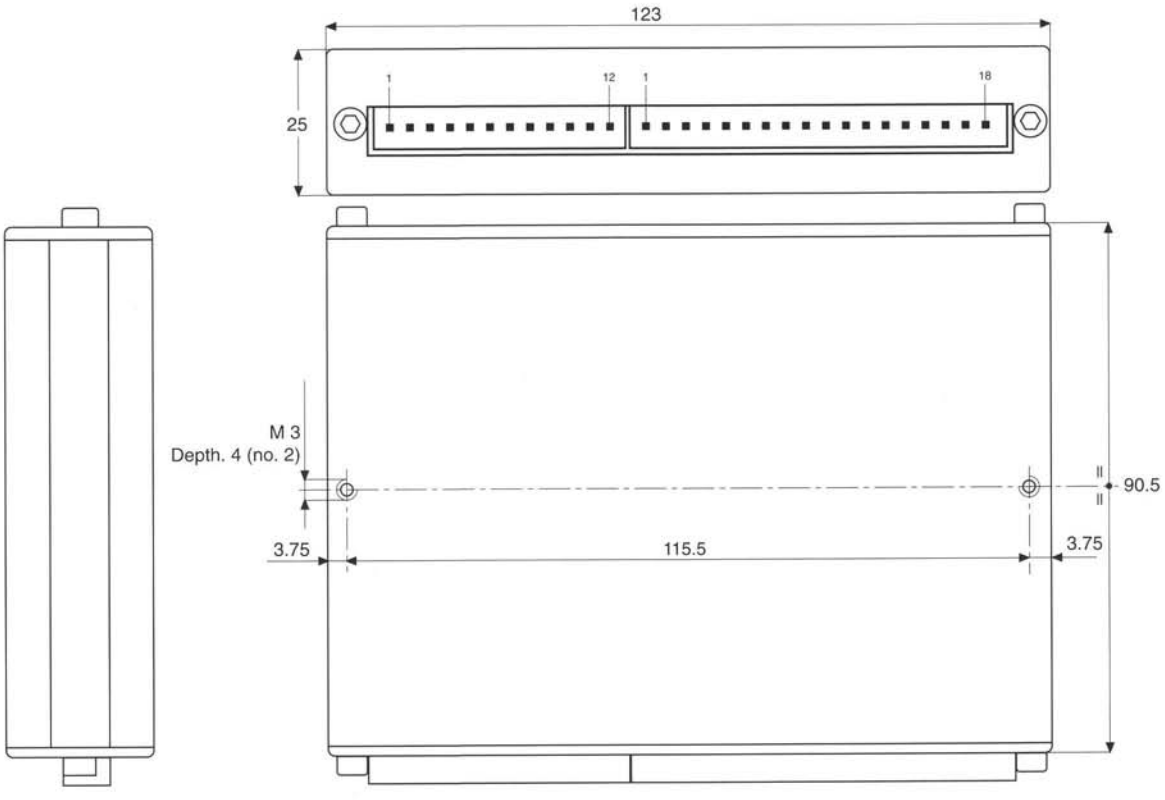


1 • Valve 8 Output control
2 • Valve 7 Output control
3 • Valve 6 Output control
4 • Valve 5 Output control
5 • Valve 4 Output control
6 • Valve 3 Output control
7 • Valve 2 Output control
8 • Valve 1 Output control
9 • Valve Common
10 • Valve Common
11 • Valve Common
12 • Valve Common

18-POLE TERMINAL BLOCK CONNECTOR

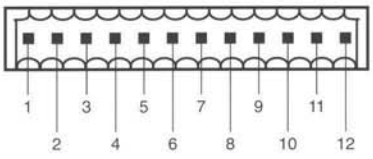


1 • + Supply	15 • + Channel 7 Input
2 • – Supply	16 • – Channel 7 Input
3 • + Channel 1 Input	17 • + Channel 8 Input
4 • – Channel 1 Input	18 • – Channel 8 Input
5 • + Channel 2 Input	
6 • – Channel 2 Input	
7 • + Channel 3 Input	
8 • – Channel 3 Input	
9 • + Channel 4 Input	
10 • – Channel 4 Input	
11 • + Channel 5 Input	
12 • – Channel 5 Input	
13 • + Channel 6 Input	
14 • – Channel 6 Input	



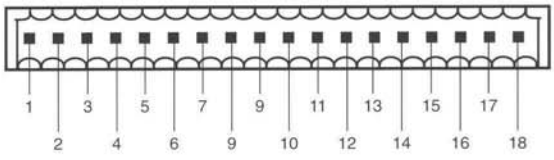
9-Channel Universal Driver Board UDB 9030

12-POLE TERMINAL BLOCK CONNECTOR

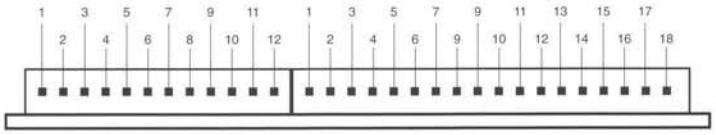


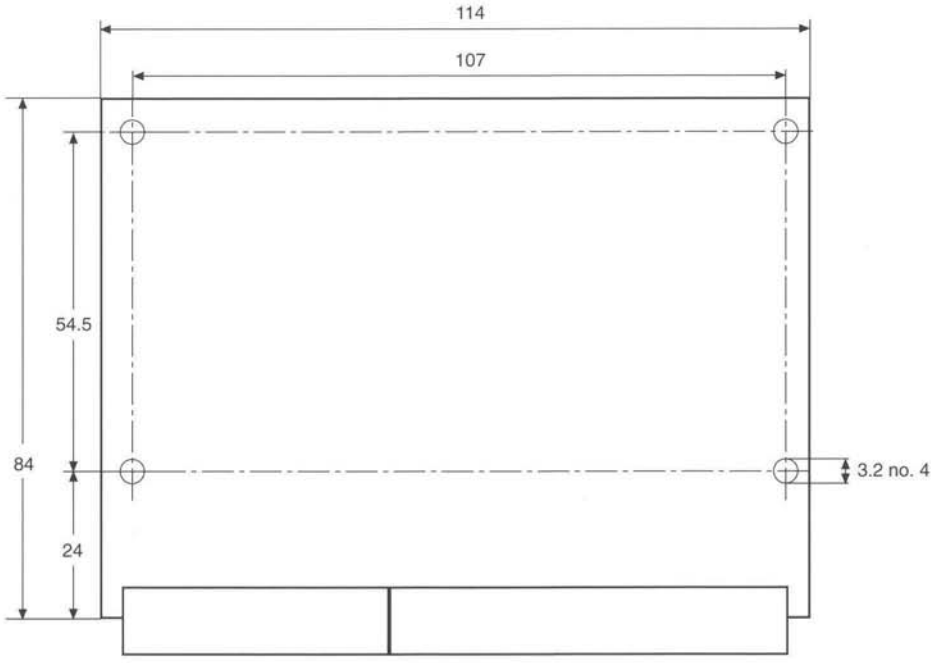
1 • Valve **9** Output control	
2 • Valve 8 Output control	
3 • Valve 7 Output control	
4 • Valve 6 Output control	
5 • Valve 5 Output control	
6 • Valve 4 Output control	
7 • Valve 3 Output control	
8 • Valve 2 Output control	
9 • Valve 1 Output control	
10 • Valve Common	
11 • Valve Common	
12 • Valve Common	

18-POLE TERMINAL BLOCK CONNECTOR



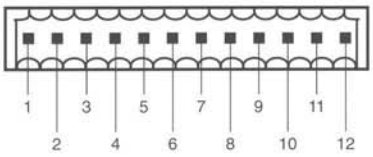
1 • + Supply	15 •
2 • – Supply	16 •
3 • + Channel 1 Input	17 •
4 • + Channel 2 Input	18 •
5 • + Channel 3 Input	
6 • + Channel 4 Input	
7 • + Channel 5 Input	
8 • + Channel 6 Input	
9 • + Channel 7 Input	
10 • + Channel 8 Input	
11 • + Channel **9** Input	
12 • – Channel **x** Input	
13 • —	
14 •	





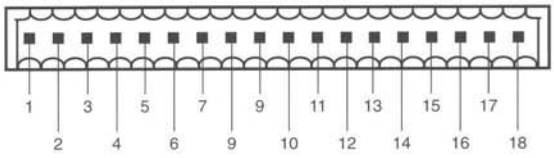
9-Channel Universal Driver Board UDB 9530

12-POLE TERMINAL BLOCK CONNECTOR



1 • Valve **9** Output control	
2 • Valve 8 Output control	
3 • Valve 7 Output control	
4 • Valve 6 Output control	
5 • Valve 5 Output control	
6 • Valve 4 Output control	
7 • Valve 3 Output control	
8 • Valve 2 Output control	
9 • Valve 1 Output control	
10 • Valve Common	
11 • Valve Common	
12 • Valve Common	

18-POLE TERMINAL BLOCK CONNECTOR



1 • + Supply	15 •
2 • – Supply	16 •
3 • + Channel 1 Input	17 •
4 • + Channel 2 Input	18 •
5 • + Channel 3 Input	
6 • + Channel 4 Input	
7 • + Channel 5 Input	
8 • + Channel 6 Input	
9 • + Channel 7 Input	
10 • + Channel 8 Input	
11 • + Channel **9** Input	
12 • – Channel **x** Input	
13 • —	
14 •