Remote Programming (RP) Option

The RP option is an additional assembly that can be fitted to an output module during production. The option interfaces directly with the module voltage control circuitry and enables the user to alter the module preset output voltge by connection of an external programming resistance.

Figure 1 below shows the typical module voltage control circuit and interface connection for the RP option.
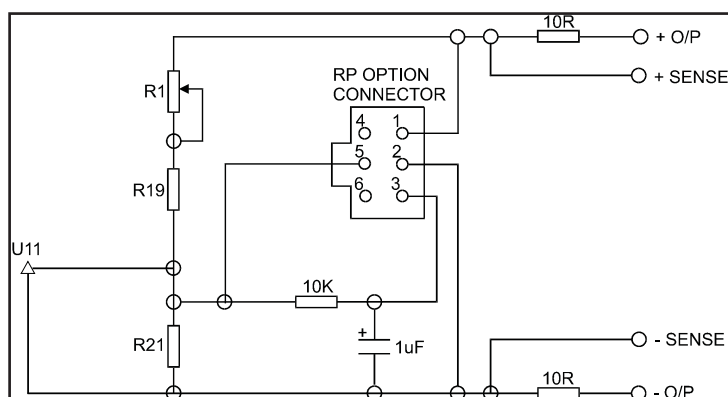

Option Connector Pin-Out	
Pin	**Function**
1	+ sense
2	- sense
3	Control 2
4	NC
5	Control 1
6	NC
6-way Molex 90142-0006 (crimp terminals 90119-2109)	

Figure 1

Regulator U11maintains 2.42-2.57V (1.21V-1.27V for Q & R modules) at the reference pin (option connector pin 5). Adding an external shunt resistance across R21 (between option connector pins 5 & 2) will increase the module output voltage above the level set by potentiometer R1. Adding an external resistance across R19 & R1 (between option connector pins 5 & 1) will reduce the output voltage. Internal resistor values for the various module types are shown in the table below. The output voltage should never be adjusted outside the normal specified limits (this would violate performance and safety approvals).

A	4.5V-5.5V	560R 2%	910RP 2%	1K
B, Z	4.5-5.5V	560R 2%	820R 2%	1K
C	5V-16V	470R 1%	1K2 1%	10K
D	18V-29V	5K6 1%	1K 1%	10K
F	9V-16V	4K7 1%	2K2 2%	10K
G	18V-28V	5K6 1%	1K 1%	10K
M	5V-16V	470R 1%	1K2 1%	10K
N	18V-29V	5K6 1%	1K 1%	10K
Q	2.7V-3.9V	220R 1%	430R 1%	1K
R	2.7V-3.9V	220R 1%	430R 1%	1K
Note: RP option is not compatible with E, H, P, S J modules.				

Example:

To adjust output voltage of C module from 10V to 12V using external resistor.

Step (1) set module output voltage to 10V using module voltage adjust potentiometer.

Step (2) calculate required external shunt resistor across R21 to raise output voltage by 2V as follows:

Normal current in R19, I1=2.5V/R21=2.5/1K2=2.08mA.

When Vout = 10V, R19 + R1 = (10-2.5)/2.08mA = 3606 Ohms

Required external shunt current to increase Vout by 2V = 2/3606 = 0.55mA

So, required external shunt resistance = 2.5/0.55mA - 4545 Ohms.

(note: For Q & R modules, replace 2.5V in above calculation with 1.24V).

There will be some variation due to component tolerance, so an ideal method is to set the programmed voltage using an external potentiometer instead of a fixed resistance. A fixed resistance should be included in series with the potentiometer to prevent the possibility of module output voltage being adjusted beyond the specified limits. Never connect external capacitance directly between pins 2 & 5 or 1 & 5 of the option connector.