

PowerFace™

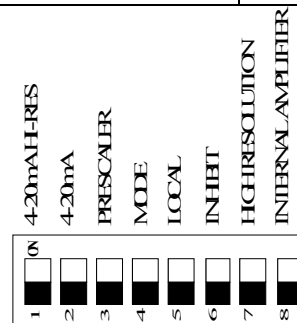
MPC34A

Isolated Multimode Mains Power Controller (Phase & Burst-Firing Control)

- ❖ Accurate and precise mains control
- ❖ Choice of Phase or Burst Mode
- ❖ Full galvanic isolation of 5kV between the low voltage input and the mains.
- ❖ Provision for output overload protection
- ❖ Internal overheat shutdown protection
- ❖ Soft Start and Start Delay for reliable switching
- ❖ Local or Remote control offering a choice of input
 - ◆ 0-1V
 - ◆ 0-2V
 - ◆ 0-5V
 - ◆ 0-10V or
 - ◆ 4-20mA loop with variable compliance.
- ❖ Adjustable timebase in Burst Mode
- ❖ Input Inhibit function
- ❖ Fully non committed comparator or operational amplifier
- ❖ Unlimited power capability via external triac or thyristor modules providing more than 250A control.
- ❖ Auxiliary output for driving isolating contactors for extra safety
- ❖ 5V power/reference supply for external use.

For convenience this table provides configuration settings for all main possibilities.

Required Configuration		Switch Setting
1	Local Burst control (use TBASE to set timebase)	
2	Local Phase control (set TBASE to maximum and use POWER to set the power)	
3	Remote 0-1V (set mode switch 4 for phase or burst as required)	
4	Remote 0-2V (set mode switch 4 for phase or burst as required)	
5	Remote 0-5V (set mode switch 4 for phase or burst as required)	
6	Remote 0-10V (set mode switch 4 for phase or burst as required)	
7	Remote 4-20 mA loop (set mode switch 4 for phase or burst as required)	
8	Remote 4-20 mA loop Hi-Res (set mode switch 4 for phase or burst as required)	



Configuration Switch Details

Switch	Function
1	Selects the 4-20 mA High Resolution input. Provided the source can generate a voltage of at least 5V this mode can be used by setting the switch to ON. Switch 7 is required to also be on. This switch is mutually exclusive with 2,5.
2	Select the 4-20 mA range when the source can only manage a voltage up to 1V. Switch 7 should be off. This switch is mutually exclusive with 1,5.
3	This is a x2 Prescaler which can be used to double the range of voltage required to obtain full output from the PowerFace™. Thus a normal 0-1V will become 0-2V and 0-5V will become 0-10V. This is very useful for certain BMS controls which produce 0-10V for full response. This switch is mutually exclusive with 5.
4	Mode switch. Off for Burst and on for Phase. When in the phase mode it must be ensured that the TBASE control is also set to maximum otherwise the PowerFace™ may not successfully register the correct mode.
5	On for Local control. Off for Remote control. In local mode make sure there is no input to the IN terminal and that switch 7 is on. This switch is mutually exclusive with all other switches except the Mode (4) and Inhibit (6) switches.
6	Inhibit switch. Setting it to on will disable the PowerFace™ and auxiliary output which, if used to power a set of contactors, will effectively isolate the load. This inhibit may be overridden externally by pulling low the IH terminal. Thus the switch may be kept permanently closed whilst the inhibit is externally controlled.
7	High resolution mode. Used to switch the PowerFace™ into its basic 0-5V range which provides 255 discrete power levels. The standard mode of 0-1V provides 51 discrete power levels, amply sufficient for most applications.
8	Internal amplifier. The output of the internal non-committed amplifier is fed directly into the PowerFace™ overriding any other input setting. This should only be set if the amplifier has been used to produce suitable signal.

Technical Specifications (Max)

Low Voltage Side

Supply Voltage, V_s	5.0 $\pm$ 1.0 V	
Max Supply Current	30	mA
Control Input Range	0 - 1 (or 0 - 5)	V
Inhibit High Logic	>4.0	V
Inhibit Low Logic	<3.0	V
Supply Rejection	0.5	%/V
Temp Coefficient	0.25	%/°C
Max Input (all pins)	20	V

Error Amplifier:

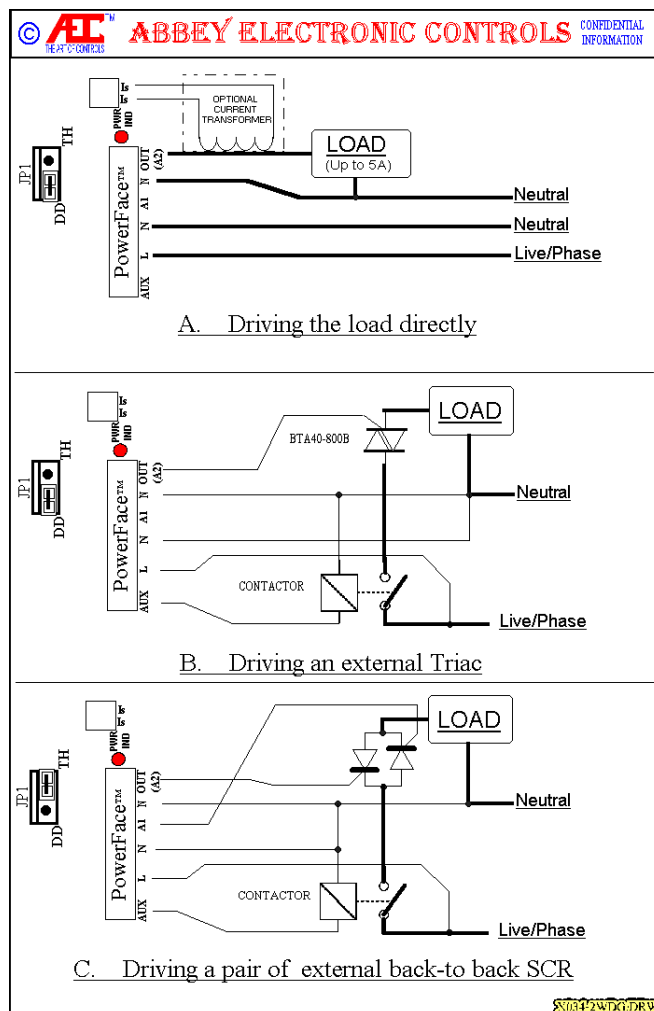
Input Offset Voltage	$\pm$ 5	mV
Bias Current	0.25	μ A
Input Offset Current	$\pm$ 50	nA
C M Input Range	0 - 5	V
Output Range	0 - 4.5	V @ 5 mA
Gain	2.5×10^4	

High Voltage Side

Mains Supply Range	230	V 50 Hz
Max Load Current	5	A
Non Rep. Surge	50	A (10 ms)
Maximum Load	1.0	kW
Minimum Load	10	W

Isolation Voltage	5	kV
Operating Temp	-10 to +70	°C
Overheat Shutdown	90	°C
Overheat Reset	60	°C

External Dimensions 116 x 96 x 56 mm



PowerFaceTM MPC34A Multi Mode Power Controller

