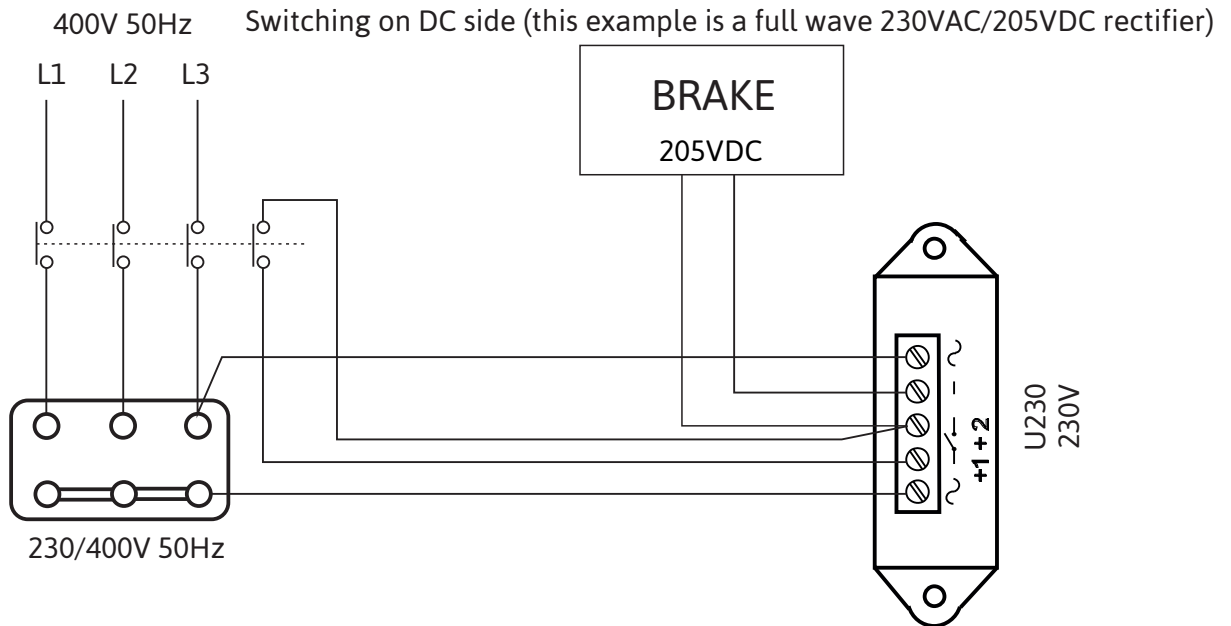


Generally there are two problems in brake switching:

(1) Delay in stopping the motor (de-energising of the brake)

When the power is switched off the motor is still turning and for a brief period of time it acts as a generator and feeds the brake with voltage and causes a delay in disconnecting. To overcome this problem the power disconnection must be done simultaneously at the AC and the DC side of the rectifier. Any modern rectifier can do that.



(2) Delay in starting the motor (energising the brake)

The delay in energising of the electromagnet can be overcome by switching rectifier. It works not so dissimilar to Star/Delta motor starting. To start with the rectifier acts as bridge rectifier (full wave rectifier) and short term overloads the brake electromagnet. The overloaded electromagnet delivers greater brake unlocking force on the short term basis. Then (in a few milli-seconds) it switches over to half wave rectifier and maintains this connection until the motor is switched off.

Special switching rectifier needs to be used for that.

Example: Precima PMG 480-S switching rectifier

Input Voltage (AC): $U_1 = 215-500VAC$
 Output Voltage (DC): $U_2 = 0.9 \cdot U_1$ (for 800ms \pm 300ms)
 $U_2 = 0.45 \cdot U_1$ (until the motor stops)

