

POWER UNDER CONTROL



Allenwest Electrical Limited



Easy Brake
DC. Injection Braking System

Allenwest Electrical Limited has been an established business in Brighton since 1910 and has for decades enjoyed a world-wide reputation for its highest quality Motor Control Equipment.

Easy Brake has been designed specifically for the Woodworking Industry due to the introduction of the **P.U.W.E.R.** (Provision of Use of Work Equipment Regulations). The range of products has been developed using the motor control experience of Allenwest coupled with the assistance of experts in the Woodworking and associated industries. **P.U.W.E.R.** requires that woodworking machinery be subjected to a risk assessment, to determine whether there is a risk of contact with the tool while it runs down. If there is such a risk then automatic braking that complies with the following statement must be fitted.

"The machinery must be equipped with an automatic brake that stops the tool in sufficiently short time (defined in CEN standards as 10 seconds or less) if there is a risk of contact with the tool while it runs down."

Stopping time can be longer if stopping in 10 seconds might be positively harmful to the machine and dangerous to the operator. This time might be up to 35 seconds for some bandsaws. Machinery users have until December 2003 to comply with the regulations, a few machines have a time extension until December 2005.



Typical machines that will require upgrading to incorporate braking are,
Circular Saws ● Band Re-Saws ● Dimension Saws ● Routers ● Cross-cut Saws
Thicknessers ● Single and Double end Tenoners ● Planers.

Allenwest have a comprehensive range of standard DC Injection Brake Motor Starters suitable for applications from a Circular Saw to a Multi-head Single Ended Tenoner. Whatever the machine or application Allenwest have the design knowledge and manufacturing flexibility to supply individual tailor made units.

Stand Still Detection System is fitted to all three phase units. Unlike other manufacturers units this feature provides additional protection for the motor. The electronic brake module not only generates and injects the DC voltage at the appropriate time, it also monitors and detects when the motor has come to a stand still and then automatically switches off the DC. Many other units available will inject DC into the motor for a pre-set time, this usually being considerably longer than the motor takes to stop. The Stand Still feature prevents unnecessary overheating of the motor and enables various cutter sizes, which will obviously develop different inertias, to be fitted to any one motor without continually changing the DC injection time.

The product range consists of Direct on Line versions (Full Voltage Starting) and Star Delta versions (Reduced Voltage Starting). The fully enclosed units are complete with starter and include appropriately rated Thermal Overload Relay for close protection of the motor and main cabling.

Multi Head versions, stand alone DC Injection Brake Modules and bespoke versions are also available.

Main Features



Easy to install Replaces existing starter. **Easy on the motor** Stand Still Detection ensures protection. **Easy to press Stop** Extended Mushroom Head stop button.

Easy Protection Close Overload Protection for the motor. **Easy Adjustment** Time and Torque adjustable. **Easy to Stop** Controlled stopping reduces wear and tear. **Easy to Select** Supplied as complete starters selected by rating. **Easy on your pocket**

Minimum installation time. **Easy to integrate** Into existing machinery.

Easy to maintain Maintenance Free. **Easy to obtain** Most units ex-stock



Installation

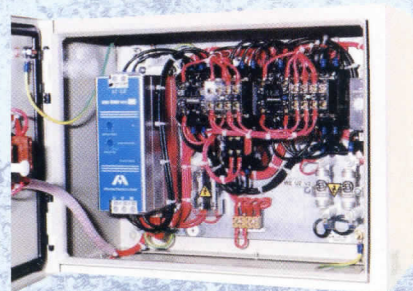
All units can be installed by a competent industrial electrician or alternatively Allenwest have a register of Brake installers that can be used.

Specification

Enclosure	IP55 Painted Steel
Overload Protection	Thermal
Voltages	Main 415V. 3Ph. 50Hz. or 240V. 1Ph. 50Hz. Control 415V. 50Hz. or 240V. for 1Ph. Units. (Others available on request)
Frequency	50Hz.
Switching Duty	12 Equally spaced start/stop operations per hour at maximum unit rating. Higher rates of operation consult Allenwest Electrical Ltd.
Temperature	Operating -10 to +45 C Storage -20 to +65 C
Specifications	IEC 947 BSEN60947
Fuses	Control circuit protection and Module protection by High Speed Fuses
Module Adjustments	Braking Torque (current) Max. 2.5 x Motor rated current. Braking Time 1 to 10 secs up to 7.5 HP. 1 to 20 secs. 10 HP and above. Standstill Detection automatically switches the DC braking current off once the motor has come to a complete stop. Standstill detection is not functional on single phase units.
Module Indications (LED)	Green – Power ON Yellow – Braking Contactor CLOSED Yellow – DC Injection ON



Star Delta with Tracking



This starter incorporates a Track/Run selector switch, and a separate Track pushbutton. With the selector switch in the Run position the starter functions as a normal Star Delta with DC Injection Braking on Stopping. With the selector switch in the Track position the starter operates only when the Track button is held pushed. With the Track button pushed the motor runs in the star configuration until the Track button is released, the motor is then disconnected from the supply and stops under its own inertia (DC Injection Braking is not operational). DC Injection Braking is only operational in the Track mode if the main stop circuit is broken in any way, e.g. Overload trip, safety interlock or emergency stop button. The Tracking feature is for use on Resaws when fitting a replacement blade.

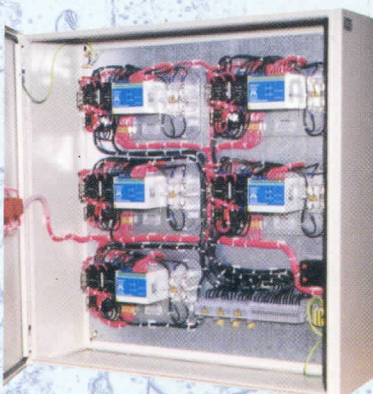
Motors

Easy Brake starters are suitable for all conventional three phase and single phase induction motors.

Motor rating must be known before ordering.

Easy Brake starters are not suitable for slip ring motors.

Multi Head Starters



These units incorporate an individual starter and electronic DC brake module for each motor, this ensures that the stand still detection is fully operational and that DC injection is only applied to running motors when the stop button is pushed. The starters are designed for wall mounting and incorporate terminals for connection to remote start/stop buttons on the machine.



Allenwest Electrical Limited are also able to offer a comprehensive range of Contactors, Overload Relays and conventional Motor Starters. Allenwest would be pleased to supply catalogues on request.

Easy Brake

Incorporating Stand Still Detection

DC Braking Units - Production Type to replace existing starter and to include Overload Protection.

Max Motor Size	Overload Current Range	Motor Voltage	Dimensions H x W x D	Order Ref	Dimensions H x W x D	Order Ref
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Three Phase - Complete Starter with Brake for **Direct-on-line** applications.

i.e. - Full voltage starting of motors. Timer 1 - 10 seconds with automatic stand still detection. Typical applications - Circular saws - Cross Cuts - Routing Machines - Thicknessing Machines - Planers

1.5 HP/1.1KW	1.8 - 2.7 amps	415v a.c	200 x 330 x 127mm	BDL1
2HP/1.5KW	2.7 - 4 amps	415v a.c	200 x 330 x 127mm	BDL2
4HP/3KW	4 - 7 amps	415v a.c	200 x 330 x 127mm	BDL4
5.5HP/4KW	7 - 10.5 amps	415v a.c	200 x 330 x 127mm	BDL5
7.5HP/5.5KW	10.5 - 16 amps	415v a.c	200 x 330 x 127mm	BDL7
10HP/7.5KW	10.5 - 16 amps	415v a.c	300 x 300 x 200mm	BDL10
15HP/11KW	16 - 22.5 amps	415v a.c	300 x 300 x 200mm	BDL15



Single Phase - Complete Starter with Brake for **Direct-on-line** applications.

Note: Automatic standstill detection is not functional on single phase starters.

1.5 HP/1.1KW	7-10.5 amps	240v a.c	200 x 330 x 127mm	BDL1/SP
2HP/1.5KW	10.5 - 16 amps	240v a.c	200 x 330 x 127mm	BDL2/SP
3HP/2.2KW	10.5 - 16 amps	240v a.c	300 x 300 x 200mm	BDL3/SP

Note: Starters incorporate a contact for switching out start capacitor before injecting D.C.

Three Phase - Complete Starter with Brake for **Star Delta** applications. ie - reduced voltage starting of motors. Timer 1 to 10sec (7.5HP) 20 sec (10HP & above) with automatic stand still detection. Add T to the last letter for bandsaws etc for tracking mode facility.

			Without Tracking		With Tracking	
5.5HP/4KW	6.9 - 12 amps	415v a.c	300 x 400 x 200mm	BSD 5	400 x 400 x 200mm	BSDT 5
7.5HP/5.5KW	6.9 - 12 amps	415v a.c	300 x 400 x 200mm	BSD 7	400 x 400 x 200mm	BSDT 7
10HP/7.5KW	12 - 18 amps	415v a.c	300 x 400 x 200mm	BSD 10	400 x 400 x 200mm	BSDT 10
15HP/11KW	18 - 27 amps	415v a.c	300 x 400 x 200mm	BSD 15	400 x 400 x 200mm	BSDT 15
20HP/15KW	27 - 39 amps	415v a.c	300 x 400 x 200mm	BSD 20	400 x 400 x 200mm	BSDT 20
25HP/18.5KW	27 - 39 amps	415v a.c	300 x 400 x 200mm	BSD 25	400 x 400 x 200mm	BSDT 25
30HP/22KW	39 - 55 amps	415v a.c	300 x 400 x 200mm	BSD 30	400 x 400 x 200mm	BSDT 30
40HP/30KW	55 - 69 amps	415v a.c	400 x 600 x 250mm	BSD 40	400 x 600 x 250mm	BSDT 40
50HP/37KW	55 - 69 amps	415v a.c	400 x 600 x 250mm	BSD 50	400 x 600 x 250mm	BSDT 50
75HP/55KW	86 - 104 amps	415v a.c	600 x 800 x 300mm	BSD 75	600 x 800 x 300mm	BSDT 75

Multi Head Applications Direct on line 7.5HP/5.5KW. Star delta and other ratings available. For remote control, others available. Typical Applications - Single Ended Tenoner.

3 Motors	Multi Head Unit	415v a.c	800 x 600 x 250mm
4 & 5 Motors	Multi Head Unit	415v a.c	800 x 800 x 250mm

Ordering information required;
Number of motors and motor ratings

Module only for fitting into panel

Max Motor FLC

7.5HP/5.5KW	11 amps	415v a.c	75 x 90 x 105mm	BMD 7
10HP/7.5KW	17 amps	415v a.c	190 x 65 x 115mm	BMD 10
20HP/15KW	31 amps	415v a.c	190 x 65 x 115mm	BMD 20
40HP/30KW	58 amps	415v a.c	190 x 65 x 115mm	BMD 40
75HP/55KW	105 amps	415v a.c	280 x 154 x 169mm	BMD 75

Start & Stop Pushbutton Control Station for remote connection

2 station		240v/415v a.c	50 x 100 x 75mm	BCB 2
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