

# Solbrake

Electronic Brakes (DC Injection) 8-580A, 220-690V



For Smooth & Accurate  
Motor Braking



SOLBRAKE



# SOLBRAKE Features

## Electronic Brakes (DC Injection)

The Solbrake - Solid State Motor Brake provides fast, smooth, frictionless braking of three-phase squirrel-cage and wound rotor motors by injecting controlled DC current to the motor windings, after the mains contactor has opened.

The Solbrake is the ultimate replacement for old electrical braking systems such as Reversing (which may result in reversing rotation of the motor) or Regenerative Braking (which requires resistors to absorb the energy).

The Solbrake is used to quickly bring motors speed to zero, before operating a mechanical brake.

### Advantages at a Glance

- Reducing stopping time
  - Increase production rate in machine tools and high inertia loads
  - Increasing safety in hazardous machines
- Soft, smooth stopping - preventing mechanical wear and tear
- Adjustable braking torque - matching load size and stop time
- Maintenance free, highly reliable - all solid state
- Easy installation and operation
- Auto-stop - reducing motor heat - DC Injection ceases automatically when motor stops

### Typical Applications

- Machine tools
- Circular saws
- High inertia band-saws
- Fast stopping of high inertia loads
- Safety brakes (as long as mains supply remains)

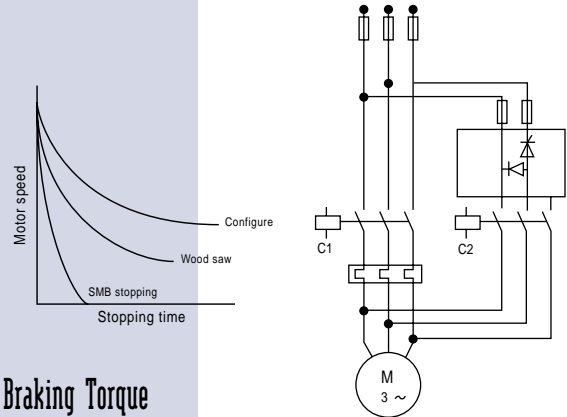
### Retrofitting

- Direct On Line
- Star-Delta systems
- Multi-speed systems
- Forward Reverse systems
- Auto-Transformer systems
- Wound Rotor systems

# Operating Adjustments

## Operating Logic

When stop signal is initiated, after motor contactor C1 opens, brake contact C2 closes, the thyristor is switched on inducing braking current. The torque (a function of the DC current) is controlled through the firing angle of the thyristor.

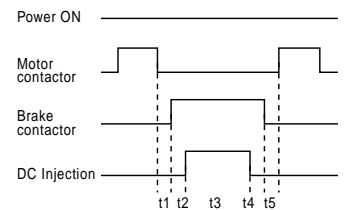


## Braking Torque

Determines the amount of DC current that the Solbrake will inject to the motor. The Solbrake can produce a braking current of up to four times the motor's nominal current. Motor stopping time depends on the braking current, inertia, load friction and speed.

## Built-in Time Delays

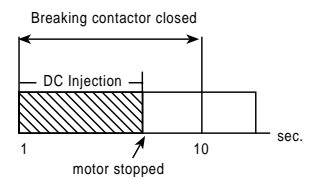
The time delays also depend on the mode of operation, as fast response is crucial when operating as Emergency stop.



Two operating modes are available - Automatic and Manual.

## Automatic Mode

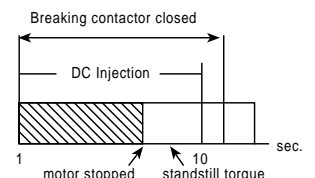
DC injection duration is automatically controlled by the Solbrake. Injection ceases when motor has come to a complete halt.



## Manual Mode

DC injection duration is according to the setting of the Braking Time potentiometer on the front panel.

Torque at standstill when setting the Braking Time to maximum, the DC current will continue to hold the motor after it has come to a complete halt.

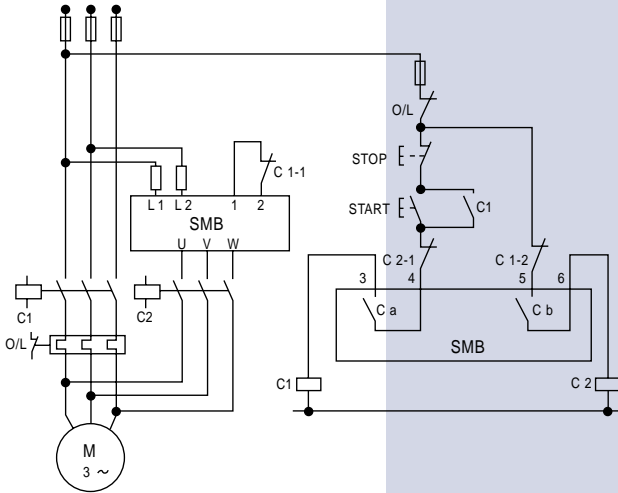


The company reserves the right to make changes or improvements without prior notice.



# Wiring & Operation

## SMB with Direct On Line Starter



### Motor Contactor C1

(with one N.O + two N.C contacts)

Contact C1 - Holding, N.O contact of contactor C1  
Contact C1-1 - Auxiliary N.C contact of contactor C1, initiates the braking process.

Contact C1-2 - Auxiliary N.C contact of motor contactor, acts as an interlock, preventing operation of brake contactor as long as motor contactor is closed.

### Brake Contactor C2

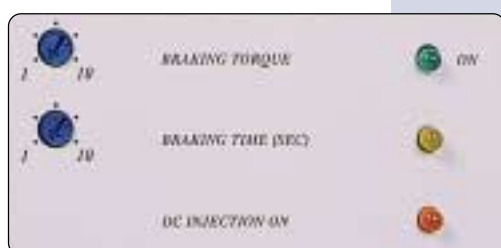
(with one N.C contacts)

Contact C2-1 - auxiliary N.C contact of contactor C2, acts as an interlock, preventing operation of motor contactor, as long as brake contactor is closed.

### SMB Contacts

Ca contact (SMB terminals 3-4), closes when mains voltage is connected to SMB terminals.

Cb contact (SMB terminals 5-6), closes upon stop signal, after time delay t1.



# Ordering Information

## Ratings and Frame Sizes

Brake Type (Ampere)	Motor KW			Frame Size
	400V	500V	690V	
Solbrake 10	4	5	7	DIN-Rail
Solbrake 17	7.5	11	15	S1
Solbrake 31	15	22	30	S2
Solbrake 58	30	37	45	S2
Solbrake 105	55	75	90	S3
Solbrake 170	75	90	132	S3
Solbrake 210	110	132	185	S3
Solbrake 310	160	220	250	S4
Solbrake 390	200	250	315	S4
Solbrake 460	250	315	400	S4
Solbrake 580	315	400	500	S4

\* Note: 5.5KW at 415V

\*\* Table data for reference purposes only

## Dimensions (mm) & Weight (kg)

Size	Width	Height	Depth	Weight
S1	90	75	105	1
S2	65	190	114	1.2
S3	154	280	160	4
S4	224	384	222	10

The SMB is selected with a 10% duty cycle

## 1. Motor Current & Braking Conditions

Motor's Full Load Ampere (FLA) -

as indicated on its name plate 10, 17, 31, 58, 105, 170, 210, 310, 390, 460, 580.

## 2. Mains Voltage (line to line), 50/60 Hz

Each brake is suitable for one of the following levels

For:	indicate -	
220-240V		230
400-440V		400
460-500V		480
575-600V		600
660-690V		690

## 3. Front Panel

S- standard

Example:

1. Solbrake rating	Solbrake 58	-	400	-	S
2. Mains voltage					
3. Front panel					

# Additional Products

Additional catalogues available from Solcon's product range

## RUS-DN

Low Voltage Digital Soft-Starter  
8-2700A, 230-1000V



## RUS-AX / RUS-DX

Analogue & Digital soft-starter



## SOLSTART

Mininature soft-starter  
For single & triple phase motors



## RUS-BX / SEM-N

Basic electronic soft-starter  
Basic electronic naval soft-starter



## MPR 2000

Motor Protection Relay  
Motor Protection Controller



## MPC 2000

Motor Protection Relay  
Motor Protection Controller



## MPR 6

Motor Protection Relay



## TPR 6

Temperature Protection Relay



## DPM 10

Digital Power Meter



## PFC 10

Reactive Power Factor Controller



## SU 124

Generator Control & Protection



## DGC 2000

Digital Generator Control & Protection



## HRU

Restart Relay



## SOLBRAKE

DC Injection brake



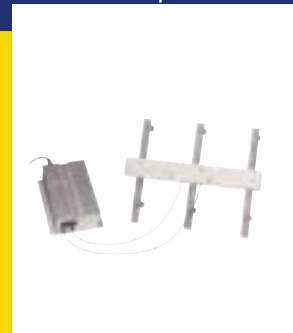
## HRUS-DN

High Voltage Digital Soft-Starter



## EPT

Electronic Potential Transformer  
1000-14000V



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