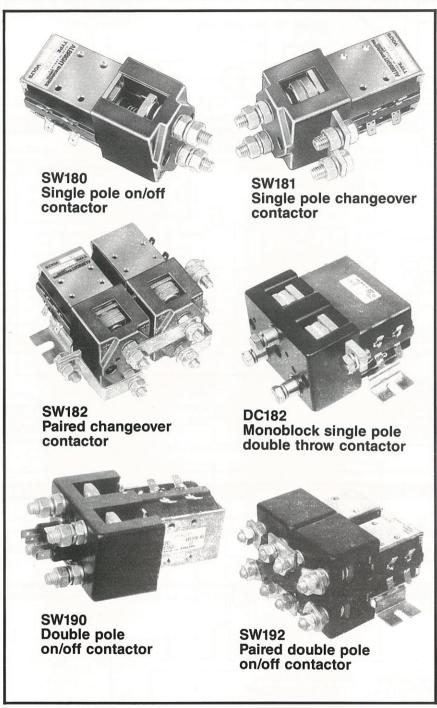
ALBRIGHT

ALBRIGHT INTERNATIONAL LTD ALBRIGHT (Engineers) LTD



SW180 AND SW190 SERIES OF D.C. CONTACTORS



UNIQUE RANGE

The SW180 series of contactors has been designed for direct current loads, particularly motors as used on electric vehicles such as industrial trucks, airport tractors, etc.

They have double breaking main contacts with silver alloy contact tips, which are weld resistant, hard wearing and have excellent conductivity.

The range comprises: Single Pole, on/off types (SW180), Double Pole, on/off types (SW190), Single Pole, changeover types (SW181), Single Pole, normally closed types (SW185) and paired versions of these for motor reversing (SW182, DC182 and SW192).

COMPACT SIZE

The contactors are compact in size and are fully serviceable, with a full range of spare parts available.

EASY INSTALLATION

Mounting is by means of 5mm tapped holes in the switch frame together with a range of mounting brackets complete with screws and washers.

Coil connections are by means of 6mm spades of which two are supplied per terminal.

Contactor types SW182, DC182, SW184, DC184, SW189 and SW192 are supplied as an assembly which includes a mounting bracket as a standard feature.

Mounting attitudes are detailed in the drawings on the following pages.

CONTACTORS IN THE SERIES

SW180 SINGLE POLE SINGLE THROW
SW181 SINGLE POLE DOUBLE THROW
DC182 MONOBLOCK SINGLE
POLE DOUBLE THROW
(for motor reversing)
SW182 PAIRED SINGLE POLE DOUBLE
THROW ON DOUBLE BRACKET
(for motor reversing)

MONOBLOCK

2 x SW180

DC184

SW185 SINGLE POLE SINGLE THROW (normally closed)

SW189 2 x SW185 ON DOUBLE BRACKET

SW190 DOUBLE POLE SINGLE THROW

SW192 PAIRED DOUBLE POLE SINGLE THROW (for motor reversing)

2 x SW180 ON DOUBLE

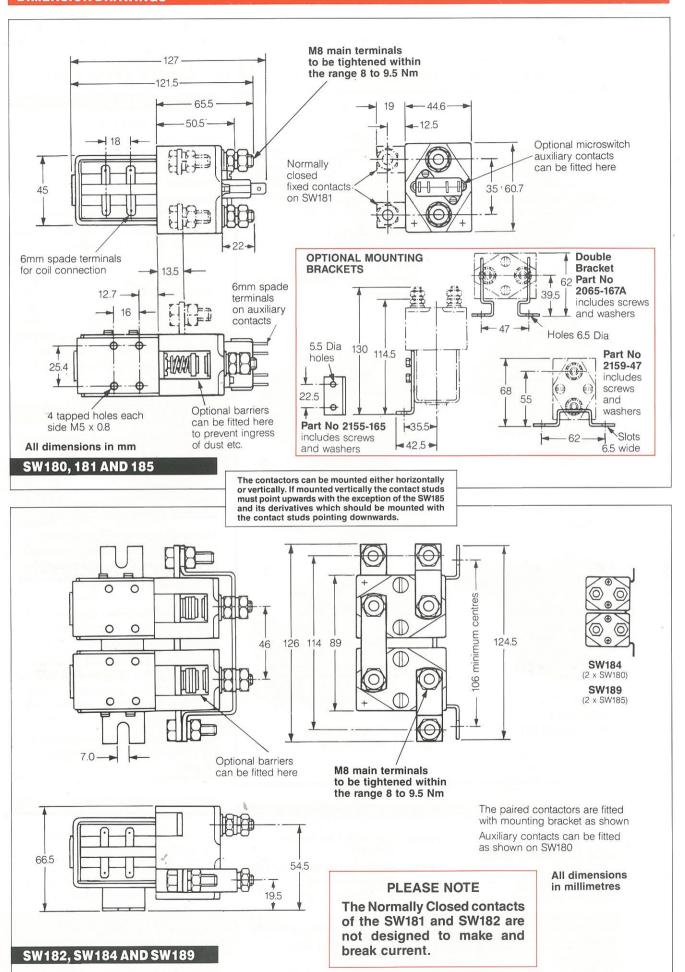
SW184

OPERATING COILS

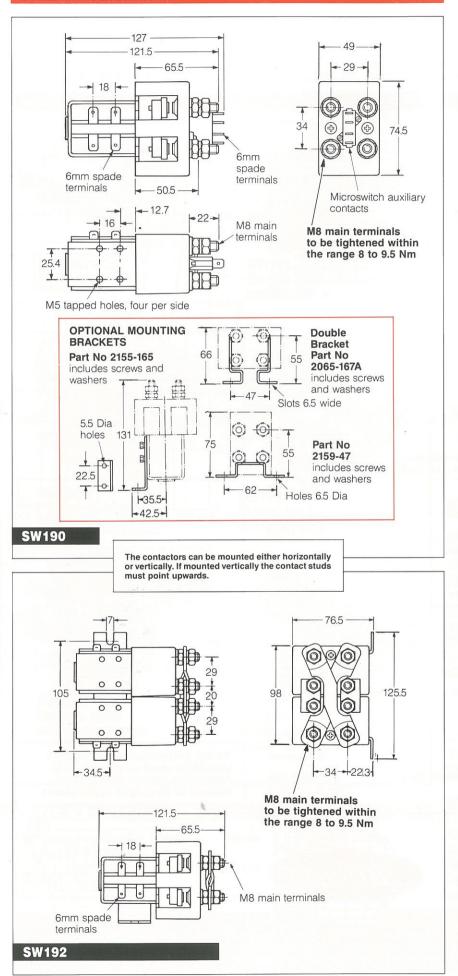
Coil voltages ranging from 6 to 240 are available and these are wound for D.C. operation.

However coils can be fitted with a bridge rectifier for use from A.C. supplies.

Coils are normally wound for intermittent duty (up to 70% "on" time) but continuous duty version (100%) are also available.



DIMENSION DRAWINGS



Pull-in voltages are approximately 60% and 66% of the rated voltage for intermittent and continuously rated types respectively.

Drop out voltage is nominally 10% of rated voltage.

Variations from these pull-in and drop-out figures can be engineered to suit particular applications.

CONTACTOR PAIRS

The contactors can be mounted in pairs on a common bracket together with inter-connecting electrical links. The most important of these arrangements are the motor reversing circuits provided by the SW182, DC182 and SW192 contactor pairs.

The SW182 and DC182 types have a built in failsafe so that if both coils are energised simultaneously the contact design creates an open circuit situation.

The SW192 types have fast drop-out times (approx 5 m.sec.) and relatively slow pull-in times (approx 20 m.sec). Therefore motor direction changes can be undertaken without risk of all contacts being closed at the same time. However, certain types of coil suppression, such as diodes, substantially increase drop-out times and care must be taken to ensure suitable suppression is fitted, e.g. diode and resistor in series.

MAGNETIC BLOWOUTS 'B'

The contactors can be fitted with permanent magnet blowouts. These enable the contacts to switch D.C. voltages of 48 or higher. Fitting of blowouts to single pole types makes the contacts polarity sensitive and the **Positive markings** on the top cover of the contactor **must** be observed.

Double pole types are not polarity sensitive when blowouts are fitted. The suffix 'B' denotes the fitting of magnetic blowouts, for example SW180B.

AUXILIARY CONTACTS 'A'

A double circuit normally open, normally closed microswitch can be fitted which has a D.C. resistive rating of 5 Amperes at 24v.

The suffix 'A' should be added to the type number when an auxiliary

contact is required, for example, SW180A.

Note: Auxiliary contacts cannot be fitted to the SW192 type.

LARGE CONTACTS 'L'

The SW180 range of contactors have standard contacts which are 10.3 mm diameter. These are suitable for

the majority of applications where switching conditions are relatively light, particularly on electronically controlled vehicles. However, in applications where more severe conditions exist, e.g. pump motor switching, all types are available with larger contacts 15.2 mm diameter. The suffix 'L' denotes larger contacts.

PROTECTION

Optional barriers can be fitted into contact housings, except for SW190 and SW192, to protect against environmental dust etc.

Magnetic blowouts should not be used with closed contact housings.

DC182 & DC184

The DC182 motor reversing contactors have a monoblock construction. They comprise two single pole changeover contactors configured in such a way so that all the necessary links for DC motor reversing applications are contained within the contact housing.

This results in a neat compact design which is compatible with modern electronic control systems.

The main terminals can be configured in a variety of ways inorder to suit the application layout.

All the features described in this brochure for the other contactors in the SW180 range apply to the DC182.



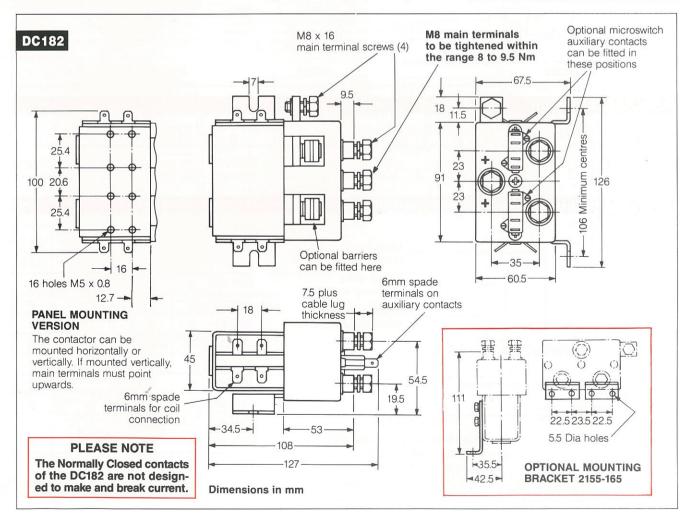
Similarly all the optional extras listed apply:

Magnetic blowouts (suffix B) Auxiliary contacts (suffix A) Large contact tips (suffix L) A variety of methods for mounting the contactor are available:

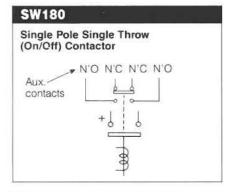
(1) An integral bracket. (2) Tapped holes in the contactor frame for direct panel mounting. (3) A separate bracket, part number 2155-165 for mounting the contactor at 90° to a panel.

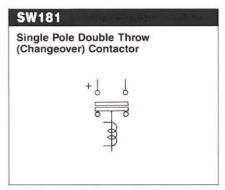
The DC182 is physically and electrically interchangeable with the SW182 reversing contactor.

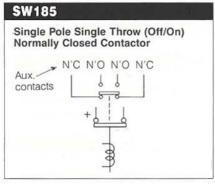
A paired single pole on/off contactor can also be supplied. This is the type DC184 and this contactor can also have integral links for the main poles if required.

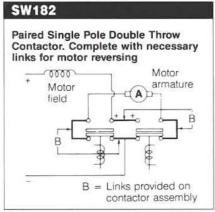


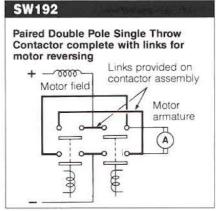
CONNECTION DIAGRAMS

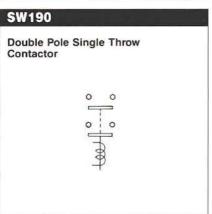


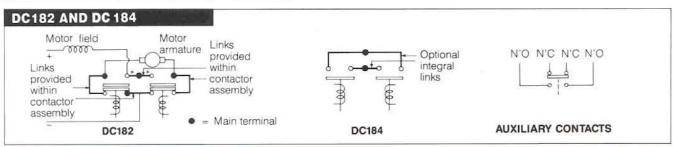












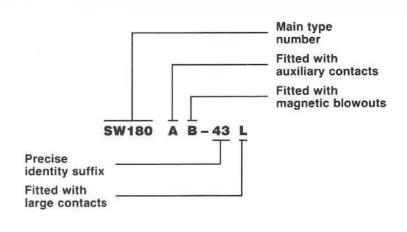
CONTACTOR WEIGHTS

Add 20 gms for each auxiliary

Add 50 gms for each set of blowout magnets.

SW180 640 gms SW181 780 gms SW182 1680 gms SW184 1350 gms SW185 655 gms SW189 1380 gms SW190 760 gms SW192 1660 gms DC182 1660 gms .DC184 1450 gms

EXPLANATION OF CONTACTOR TYPE NUMBERS

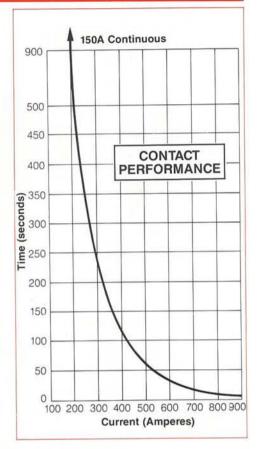


	Auxiliary Contacts	Magnetic Blowouts	Mounting Brackets	Large Contact Tips	Closed Contact Housing	
SW180	0	0	0	0	0	
SW181	0	0	0	0	0 0	
SW182	0	0	S	0	0	
SW184	0	0	S	0	0	
SW185	0	0	0	0	0	
SW189	0	0	S	0	0	
SW190	0	0	0	0	N	
SW192	Ν	0	S	0	N	
DC182	0	0	S	0	0	
DC184	0	0	S	0	0	

O = Optional Extra S = Standard Feature N = Not Available

COIL RESISTANCES FOR POPULAR VOLTAGES								
	12V DC	24V DC	36V DC	48V DC	60V DC	72V DC	80V DC	
Intermittently rated coils (ohms)	5	17	44	73	102	150	212	
Continuously rated coils (ohms)	13	44	102	150	282	427	427	

PERFORMANCE DATA			
Thermal current rating (100%)	150 Amperes		
Intermittent current rating 30% duty 40% duty 50% duty 60% duty 70% duty	275 Amperes 240 Amperes 225 Amperes 200 Amperes 180 Amperes		
Typical fault currents which can be ruptured (5 SW180 and SW185 SW180B and SW185B SW181*, SW182* and DC182* SW181B*, SW182B* and DC182B* SW190 and SW192 SW190B and SW192B	ims time constant) 1000 Amperes at 48V D.C. 1000 Amperes at 96V D.C. 1000 Amperes at 48V D.C. 1000 Amperes at 96V D.C. 1000 Amperes at 80V D.C. 600 Amperes at 120V D.C.		
* Normally open contacts, not normally closed	d contacts.		
Maximum recommended contact voltages SW180 and SW185 SW180B and SW185B SW181, SW182 and DC182 SW181B, SW182B and DC182B SW190 and SW192 SW190B and SW192B	48V D.C. 96V D.C. 48V D.C. 96V D.C. 96V D.C. 120V D.C.		
Typical voltage drop across contacts per 100 A SW180 and SW185 SW190 and SW192 SW181, SW182 and DC182 (normally open con SW181, SW182 and DC182 (normally closed co	(per pole) 40mV ntacts) 30mV		
Mechanical life	> 5 x 10 ⁶		
Coil power dissipation Intermittently rated types Continuously rated types	30-40 Watts 10-15 Watts		
Maximum pull-in voltage (coil at 20°C) Intermittently rated types Continuously rated types	60%V		
Typical drop-out voltage	10-20%V		
Pull-in time approx (n/o contacts to close)	30ms		
Drop-out time approx (n/o contacts to open) Without suppression With diode suppression With diode and resistor (depending on value)	8ms 60ms 25ms		
Main contact changeover time (SW181, SW182 Normally closed to normally open Normally open to normally closed	2 and DC182) 12ms 5ms		
Typical contact bounce period	3ms		
Auxiliary contact thermal current rating	5 Amperes		
Auxiliary contact switching capacities (resistive	5A at 24V D.C. 2A at 48V D.C. 0.5A at 240V D.C.		



All the performance data figures should be used as a guide only. Alternative ratings may be considered according to applications.

Albright is registered under BS EN ISO 14001 -Environmental Management System. Should you require information on the disposal of our products, please contact our Health, Safety & Environmental Manager or your Local Supplier for our Disposal Guidance Note.





ALBRIGHT INTERNATIONAL LTD

Evingar Trading Estate, Ardglen Road, Whitchurch, Hampshire, RG28 7BB, UK, Tel: +44 (0)1256 893060, Fax: +44 (0)1256 893562

Dedicated Sales: Tel: +44 (0)1256 890030, Fax: +44 (0)1256 890043

Email: sales@albrightinternational.com or technical@albrightinternational.com

Web Site: www.albrightinternational.com