



# Driver Unit type SRB 3107

Data sheet

2-1998

## Description

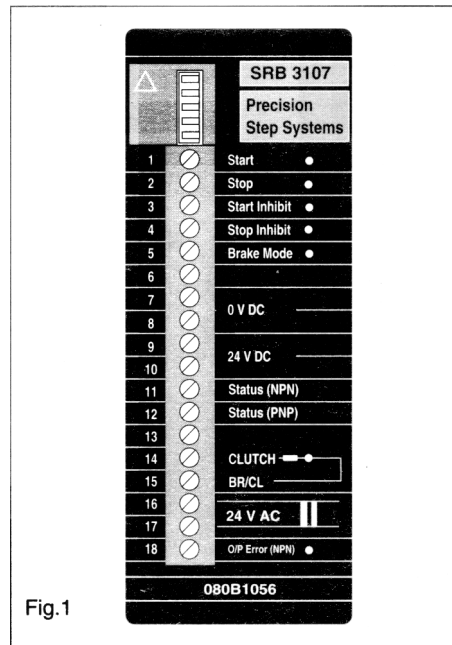


Fig.1

The SRB 3107 driver unit is designed for driving the *Easystep Clutch/Brake module* of the Laurence, Scott & Electromotors Ltd. Precision Step System.

SRB 3107 features include:

- Start and stop signal suppression
- PLC interfacing facilities
- Programmable signal inputs: edge sensitivity, NPN/PNP signal types
- 24V d.c. output
- Output error signal

The SRB 3107 driver unit can be used in conjunction with *Easystep* for a wide range of applications, primarily where starting and stopping are controlled by sensor signals.

The SRB 3107 has facilities for interaction with other control units, for example PLCs.

## Input terminals

By activating the following terminals, the functions described below can be obtained:

Terminal	Functions
1 <i>Start</i>	Activates the clutch valve driver output
2 <i>Stop</i>	De-activates the clutch valve driver output
3 <i>Start inhibit</i>	Suppresses the start signal
4 <i>Stop inhibit</i>	Suppresses the stop signal
5 <i>Brake mode</i>	Sets the <i>Easystep</i> unit in brake mode
6	Terminal not used

Note: Earth connection to housing.

## Output terminals

Terminal	Functions
7-8 <i>0 V d.c.</i>	0 V d.c. reference. <b>Do not connect to earth!</b>
9-10 <i>24 V d.c.</i>	Stabilized 24 V d.c. output, max. load 300 mA
11 <i>Status (NPN)</i>	NPN open collector output. On (0 V) when SRB 3107 is in Clutch mode
12 <i>Status (PNP)</i>	PNP open collector output. On (24 V) when SRB 3107 is in Clutch mode
13	Terminal not used
14 <i>CLUTCH</i>	Driver output for clutch solenoid valve
15 <i>BR/CL</i>	Connection to the common point of the solenoid valve. <b>Do not connect to 0 V d.c. or earth!</b>
16-17 <i>24 V a.c.</i>	Power supply. See technical data page 6
18 <i>O/P ERROR (NPN)</i>	NPN open collector output. On (0v) when SRB-3107 detects a short circuit.

Indicators

The LEDs at the following terminals indicate that the input or output is active:

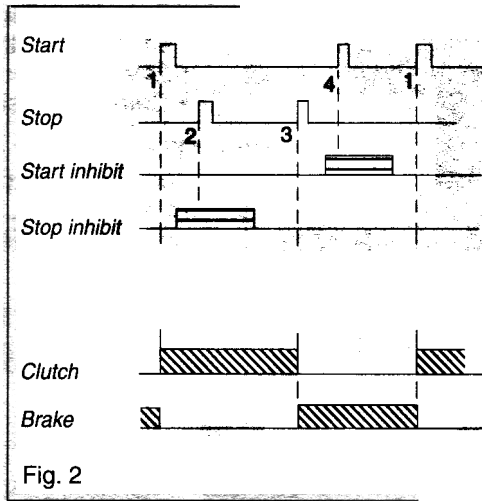
LED
Start*)
Stop*)
Start inhibit
Stop inhibit
Brake mode
Output error**)
BRAKE
CLUTCH

- \*) If inputs are set to PNP neg. edge or NPN pos. edge, LED lights up when terminals are inactive.
- \*\*) Output Error LED lights up if a short-circuit has been detected at any output terminal. Check all output connections for short-circuits. Turn off power (min. 15 s) to reset. Solenoid valve coil resistance must be as listed below:

Easystep 1A - 3B	4.2 Ω min
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The resistance depends on coil temperature

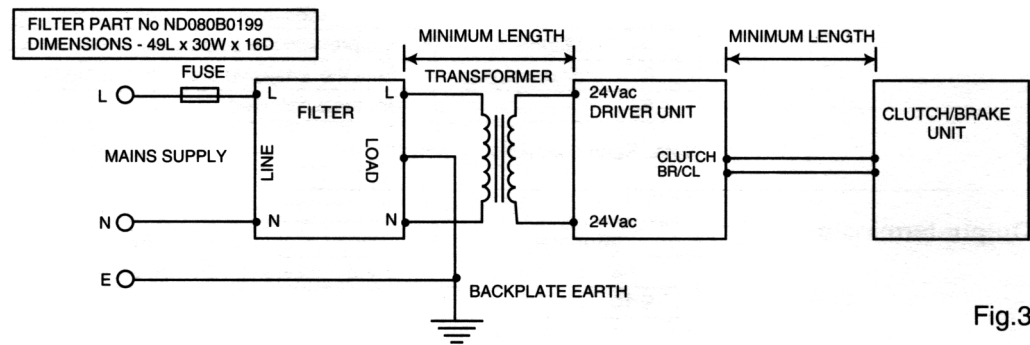
Function description



Start inhibit/Stop inhibit

1. A signal supplied at the *Start* input turns the *Clutch* output on.
2. When *Stop inhibit* is active, signals supplied at the *Stop* input are ignored.
3. A signal supplied at the *Stop* input turns the *Clutch* output off.
4. Start signals are ignored as long as *Start inhibit* is active.

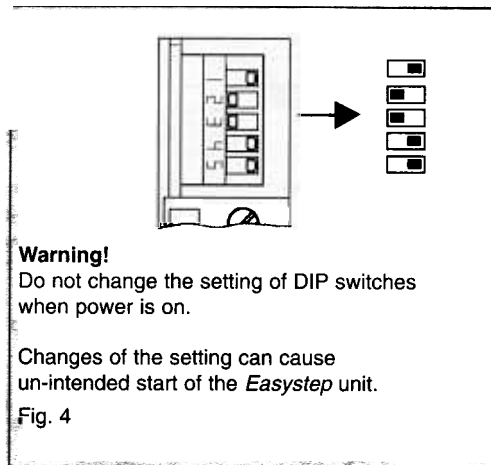
EMC Filter Installation



PSS Installation Recommendations for EMC

In order to meet the EEC Directive for EMC, the equipment should be installed as shown using the recommended filter.

- 1) Mains and output cables should not be run together.
- 2) Control cables should be separated from output cables.
- 3) Control cables should be screened.
- 4) SRB-3107 Driver Case should be earthed.



By means of the DIP switches on the front of the SRB 3107 it is possible to set the input terminals to accept signals from a wide range of signal sources.

*Start* terminal signal source type PNP or NPN is set by DIP 1.

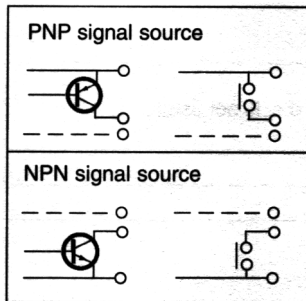
*Start* terminal edge sensitivity is set by DIP 2.

*Stop* terminal signal source type PNP or NPN is set by DIP 3.

*Stop* terminal edge sensitivity is set by DIP 4.

Input terminals 3 to 5 are set to PNP or NPN signal sources by DIP 5.

The setting of DIP switches are determined from the table below.



Signal source:		PNP	NPN
Setting <i>Start</i> terminal	Edge sensitivity		
	pos.	<input checked="" type="checkbox"/> DIP 1 <input checked="" type="checkbox"/> DIP 2	<input checked="" type="checkbox"/> DIP 1 <input checked="" type="checkbox"/> DIP 2
Setting <i>Stop</i> terminal	Edge sensitivity		
	neg.	<input checked="" type="checkbox"/> DIP 1 <input checked="" type="checkbox"/> DIP 2	<input checked="" type="checkbox"/> DIP 1 <input checked="" type="checkbox"/> DIP 2
Setting <i>Start</i> and <i>Stop</i> when using single signal source	Wiring	<input checked="" type="checkbox"/> DIP 3 <input checked="" type="checkbox"/> DIP 4	<input checked="" type="checkbox"/> DIP 3 <input checked="" type="checkbox"/> DIP 4
		<input checked="" type="checkbox"/> DIP 3 <input checked="" type="checkbox"/> DIP 4	<input checked="" type="checkbox"/> DIP 3 <input checked="" type="checkbox"/> DIP 4
Setting terminal 3-5		<input checked="" type="checkbox"/> DIP 5	<input checked="" type="checkbox"/> DIP 5

Application examples

Stop by counter

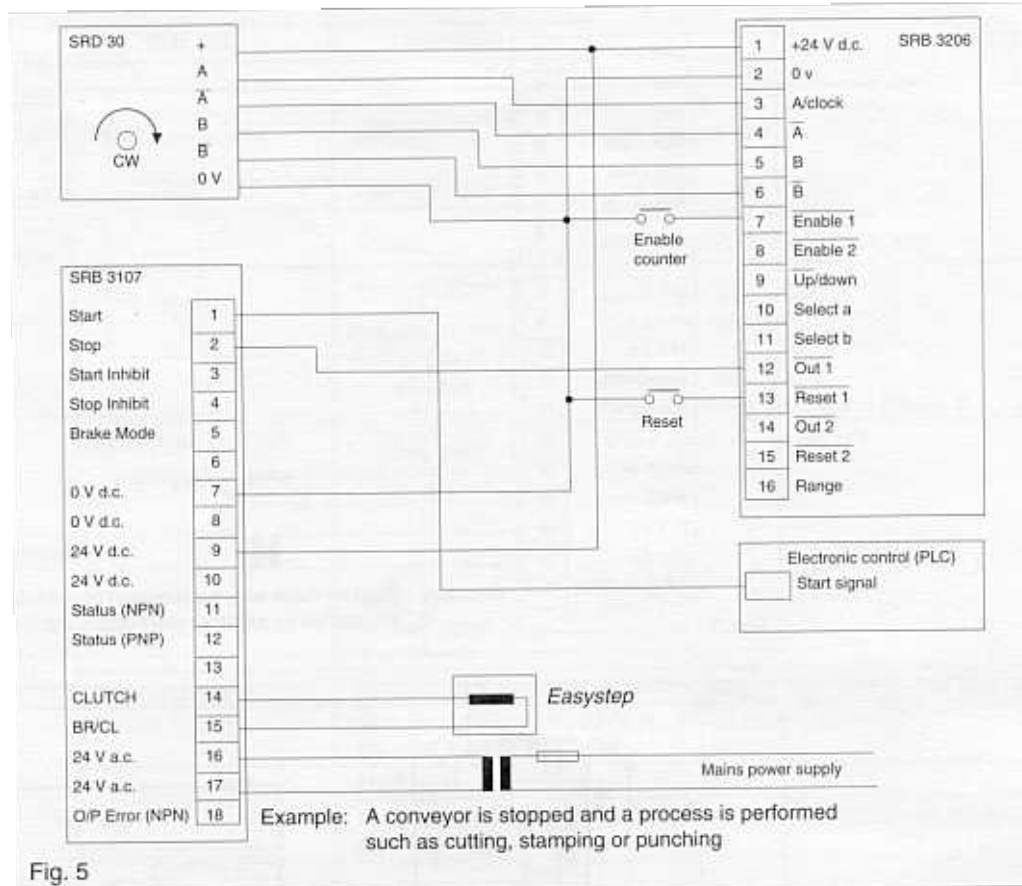


Fig. 5

Start by counter

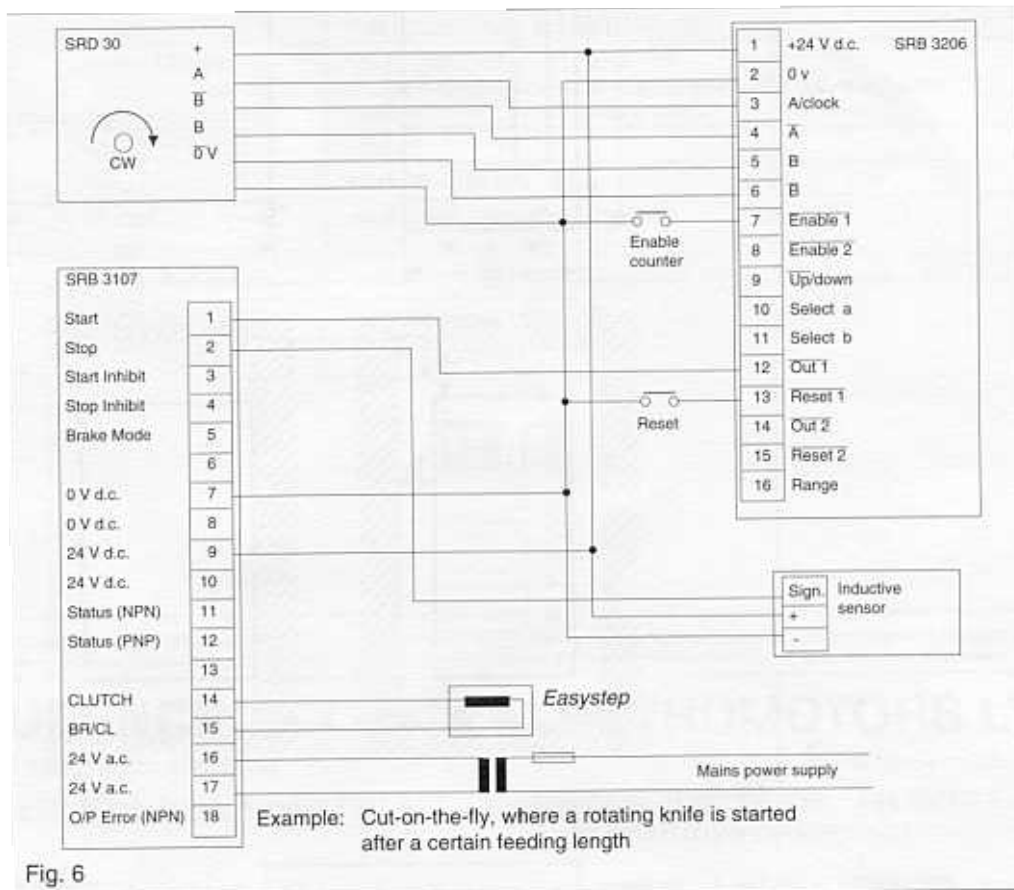


Fig. 6

Stop by mark

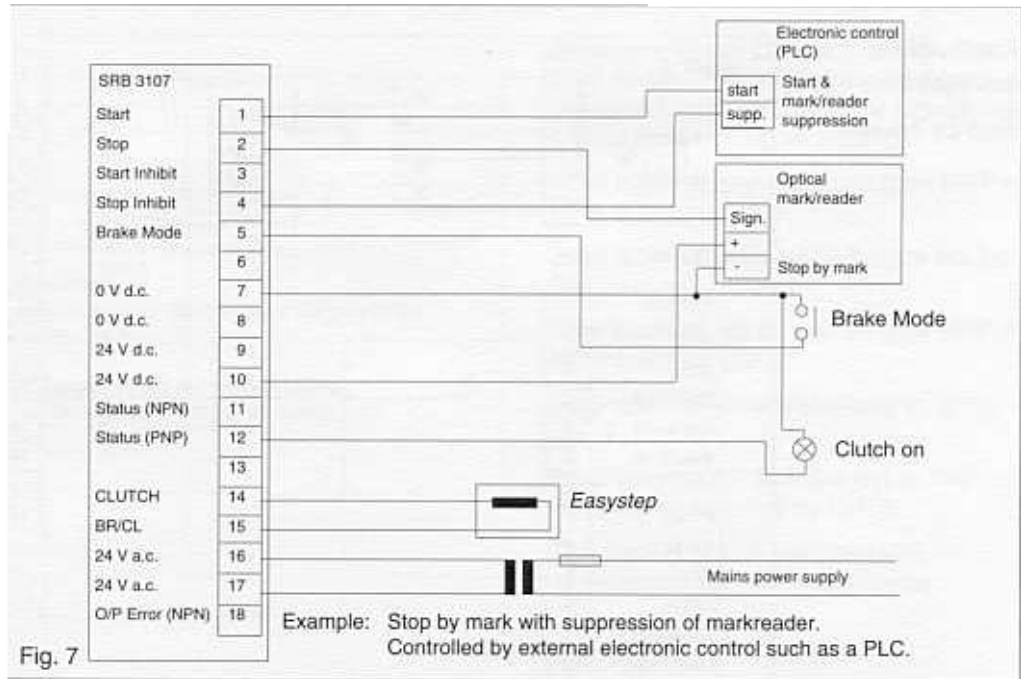


Fig. 7

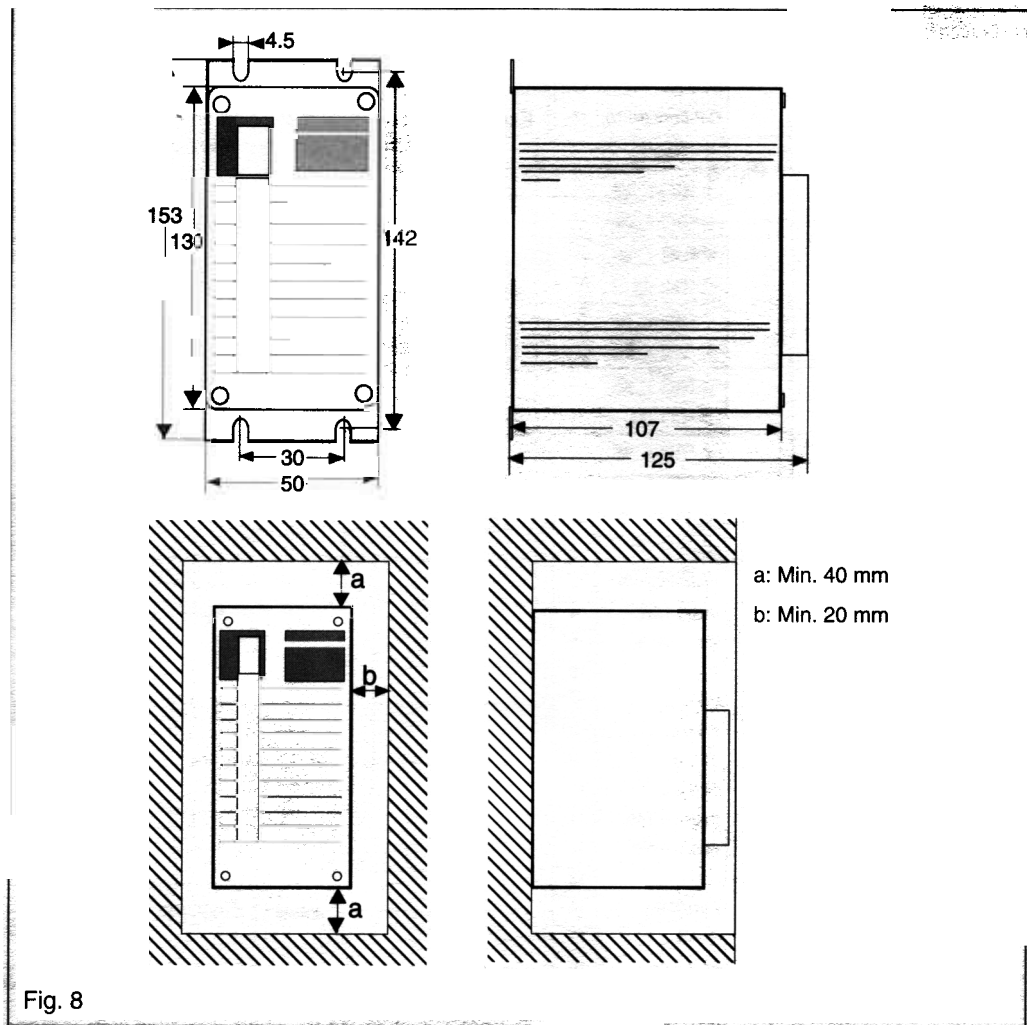
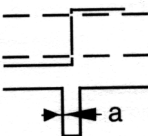
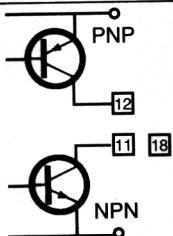


Fig. 8

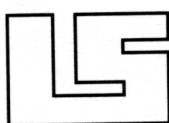
## Ordering

Type	Code no.
SRB 3107	080B1056

## Technical data

Valve driver output	Drives: <i>EasyStep</i> 1A - 3B Cycling frequency: <i>EasyStep</i> max. 20 Hz at 40°C ambient temperature Cables: Min. 0.5 mm <sup>2</sup> , max 0.25 Ω per lead
Input signals	 $U_{high} > 16 \text{ V}$ . Max. 30 V $U_{low} < 2 \text{ V}$ . min. 0 V a: Min. 0.7 ms Earth connection to housing, see fig. 9
Output status signals	 $U_{high} / V_{CC} - 2 \text{ V}$ . $I_{max}$ 100 mA $I_{leak} / 1 \text{ mA}$ $U_{low} / 2 \text{ V}$ . $I_{max}$ 100 mA $I_{leak} / 1 \text{ mA}$
Voltage output	24 V d.c. $\pm 1 \text{ V}$ stabilized (at nominal supply). Max. total current load: 300 mA
Voltage supply	24 V a.c. +10%, -15%, 50-60 Hz. Transformer max. 75 VA <b>DO NOT EARTH WITH OV</b>
Power consumption	Max. 25 W
E.M.C.	In Accordance with 89/336/EEC, amended by 92/31/EEC with associated filter part Code ND080B0199
Humidity - static - cyclic	In accordance with IEC 68-2-3 Ca In accordance with IEC 68-2-3-30 Db
Ambient temperature	During operation: 0 to 40°C 0 to 50°C when 24 V d.c. is not used Storage: -40 to 70°C
Weight	0.43 kg
Dimensions	153 x 50 x 125 mm
Enclosure	Anodized aluminium housing, IP20
Cycling frequency	Transformer
1 - 20 Hz	> 25 VA


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