

The Application Note is pertinent to the AC Drives

A Replacement Solution for Laser AC Drives

The Laser Series drives are analog, PWM, bipolar transistor adjustable frequency ac motor controller. It was designed for three phase-input power with a three phase output for 3-phase squirrel induction motors. Six models were available covering the range of 7.5 to 150 horsepower, two 240vac, two 380vac and two 480vac models. The units were chassis models with optional enclosures, available with or without operators and a digital frequency meter option. A dynamic braking module was also available. The table below is a cross-reference of available replacement drives.

| | Chassis | CT | VT | 3 phase | Commander SE | Unidrive SP Heavy Duty | Unidrive SP Normal Duty |
|-----------|-----------|------|---------|------------|--------------|------------------------|-------------------------|
| Model | Part No | HP | HP | Volts | | | |
| Laser 1 | 2950-8201 | 7.5 | | 208/240 | SE33200550 | SP2203 | |
| | | | 10 | | | | SP2203 |
| | 2950-8202 | 10 | | 208/240 | SE33200750 | SP3201 | |
| | | | | 15 | | | SP3201 |
| | 2950-8300 | 8.3 | | 380 | SE33400750 | SP2402 | |
| | | | | 12.5 | | | SP2402 |
| | 2950-8301 | 12.5 | | 380 | SE33401100 | SP2403 | |
| | | | | 16.6 | | | SP2403 |
| | 2950-8302 | 16.6 | | 380 | SE33401500 | SP2404 | |
| | | | | 25 | | | SP3402 |
| | 2950-8400 | 10 | | 415/480 | SE33400750 | SP2402 | |
| | | | | 15 | | | SP2402 |
| | 2950-8401 | 15 | | 415/480 | SE43401100 | SP2403 | |
| | | | | 20 | | | SP2403 |
| | 2950-8402 | 20 | | 415/480 | SE43401500 | SP2404 | |
| | | | | 30 | | | SP3402 |
| 2950-8500 | 7.5 | | 575 | N/A | SP3504 | | |
| | | | 10 | | | SP3504 | |
| 2950-8501 | 15 | | 575 | N/A | SP3506 | | |
| | | | 20 | | | SP3506 | |
| Laser 2 | 2950-8220 | 15 | | 208/240 | N/A | SP3202 | |
| | | | 20 | | | | SP3202 |
| | 2950-8221 | 25 | | 208/240 | N/A | SP4202 | |
| | | | 40 | | | | SP4203 |
| | 2950-8320 | 25 | | 380 | SE53402200 | SP3403 | |
| | | | | 37.5 | | | SP4401 |
| | 2950-8321 | 41 | | 380 | SE53403700 | SP4401 | |
| | | | | 61 | | | SP4403 |
| | 2950-8420 | 30 | | 415/480 | SE53402200 | SP3403 | |
| | | | | 50 | | | SP4401 |
| 2950-8421 | 50 | | 415/480 | SE53403700 | SP4401 | | |
| | | | 75 | | | SP4403 | |

| Model | Chassis Part No | CT HP | VT HP | 3 phase Volts | Unidrive SP Heavy Duty | Unidrive SP Normal Duty |
|---------|-----------------|-------|-------|---------------|------------------------|-------------------------|
| Laser 3 | 6150-8008 | 62 | | 380 | SP4403 | |
| | | | 82 | | | SP5401 |
| | 6150-8009 | 82 | | 380 | SP5401 | |
| | | | 125 | | | SP5402 |
| (1) | 6150-8010 | 62 | | 380 | SP4403*** | |
| | | | 82 | | | SP5401*** |
| (1) | 6150-8011 | 82 | | 380 | SP5401*** | |
| | | | 125 | | | SP5402*** |
| (2) | 6150-8014 | 62 | | 380 | SP4403*** | |
| | | | 82 | | | SP5401*** |
| (2) | 6150-8015 | 82 | | 380 | SP5401*** | |
| | | | 125 | | | SP5402*** |
| | 6150-8000 | 75 | | 415/480 | SP4403 | |
| | | | 100 | | | SP5401 |
| | 6150-8001 | 100 | | 415/480 | SP5401 | |
| | | | 150 | | | SP5402 |
| (1) | 6150-8002 | 75 | | 415/480 | SP4403*** | |
| | | | 100 | | | SP5401*** |
| (1) | 6150-8003 | 100 | | 415/480 | SP5401*** | |
| | | | 150 | | | SP5402*** |
| (2) | 6150-8012 | 75 | | 415/480 | SP4403*** | |
| | | | 100 | | | SP5401*** |
| (2) | 6150-8013 | 100 | | 415/480 | SP5401*** | |
| | | | 150 | | | SP5402*** |

- (1) standard with NEMA 1 Enclosure & AC line disconnect
(2) standard with NEMA 12 Enclosure & AC line disconnect
*** consult factory -- UnidriveSP Expresspak/RapidPak
(3) Replacement drives require external line fuses
(4) Laser drives have 115vac control logic, replacement drives have 24vdc control logic,
115vac AC logic Interface Kits available see page 7.

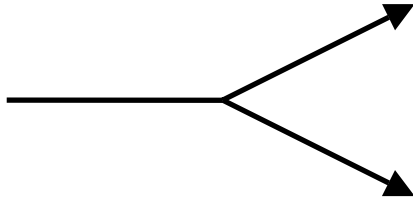
Brand Labels

The Laser series ac motor controllers were brand labeled for EPT (Emerson Power Transmission) divisions Morse and Browning and US Electric Motors (USEM).



| Part Number | EPT (Morse and Browning) | USEM |
|-------------|--------------------------|------|
| 2950-8201 | WL8201 | F353 |
| 2950-8202 | WL8202 | F354 |
| 2950-8220 | WL8220 | F362 |
| 2950-8221 | WL8221 | F363 |
| 2950-8300 | WL8300 | F355 |
| 2950-8301 | WL8301 | F356 |
| 2950-8302 | WL8302 | F357 |
| 2950-8320 | WL8320 | |
| 2950-8321 | WL8321 | |
| 2950-8400 | WL8400 | F350 |
| 2950-8401 | WL8401 | F351 |
| 2950-8402 | WL8402 | F352 |
| 2950-8420 | WL8420 | F360 |
| 2950-8421 | WL8421 | F361 |
| 2950-8500 | WL8500 | F358 |
| 2950-8501 | WL8501 | F359 |

Laser 1



**Commander SE
Size 2, 3, 4 & 5**



Click on photos for more details on these drive families



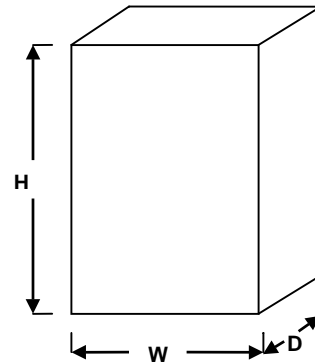
**Unidrive SP
Size 2 thru 5**

Basic Drive Dimensions:

| Drive Model | Dim (HxWxD in inches) |
|-------------|-----------------------|
| Laser 1 | 19.25 x 11.75 x 10.75 |
| Laser 2 | 35.0 x 25.0 x 12.0 |
| Laser 3 | 51.0 x 27.0 x 12.75 |

| Drive Model Commander SE | Dim (HxWxD in inches) |
|-----------------------------|-----------------------|
| Size 1 SE1---- | 6.9 x 4.0 x 5.12 |
| Size 2 SE2---- | 10.2 x 5.8 x 5.12 |
| Size 3 SE3---- | 12.4 x 7.5 x 6.13 |
| Size 4 SE4---- | 15.4 x 9.8 x 7.3 |

| Drive Model UnidriveSP | Dim (HxWxD in inches) |
|---------------------------|-----------------------|
| Size 1 SP1---- | 15.20 x 3.93 x 8.62 |
| Size 2 SP2---- | 15.32 x 6.10 x 8.62 |
| Size 3 SP3---- | 15.32 x 9.84 x 10.23 |
| Size 4 SP4---- | 21.53 x 12.20 x 11.73 |
| Size 4 SP5---- | 33.75 x 12.20 x 11.73 |



Click on the link below to obtain more information on the Commander SE

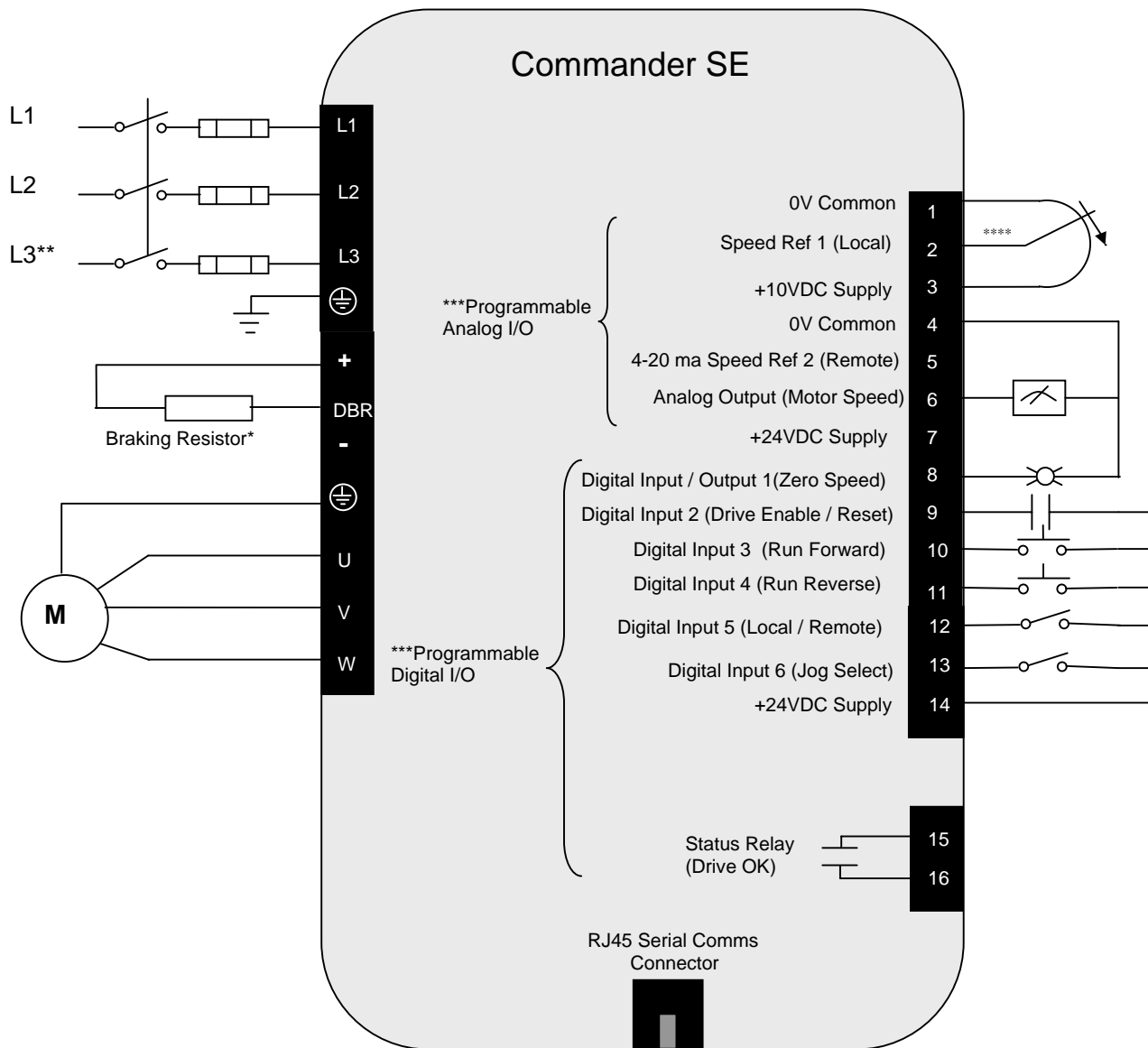
http://www.emersonct.com/download_usa/manuals/CommanderSE/CmdSEUsersGuide.pdf

Click on the link below to obtain more information on the UnidriveSP

<http://www.emersonct.com/ctcomupdate/data/manuals/unisp/UniSPUGIss11English.zip>

Basic Drive Connections:

Terminal Diagram



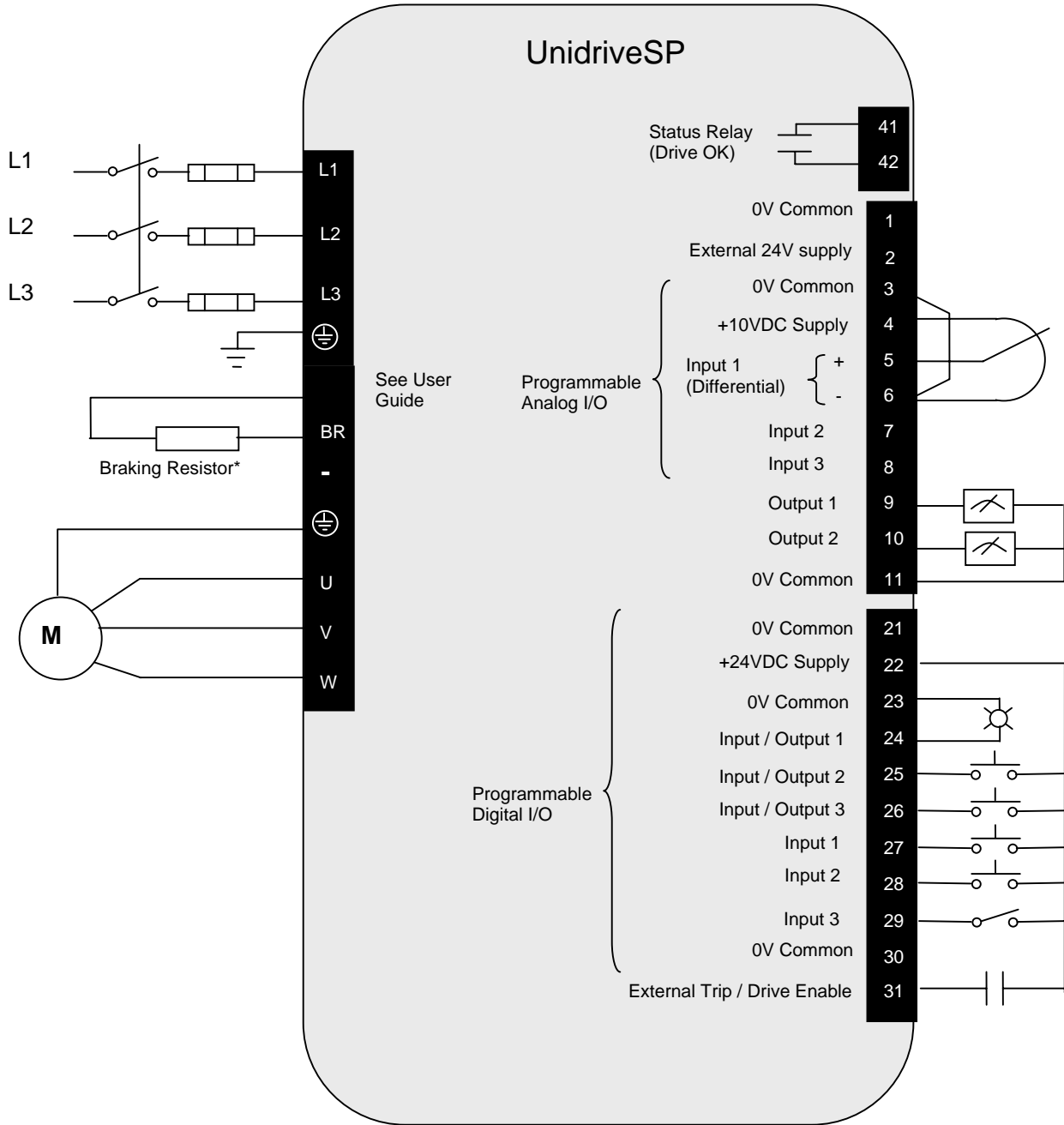
Notes

- * Thermal protection required.
Not available on Commander SE Size1
- ** Commander SE Size 1 is single-phase input only.
- *** Some programmable I/O may be modified via menu Level1 (L1). Enhanced configuration may be done using SE Soft or through the use of the optional CTKP.
- **** For negative input from a process follower, use the SE51 Bi-polar option card

For complete instructions, refer to the Commander SE User Guide.

Basic Drive Connections:

Terminal Diagram



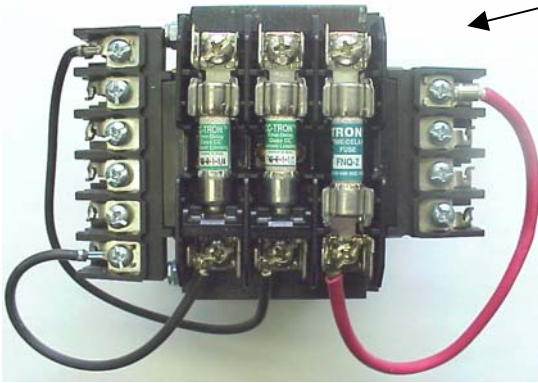
Note

*Thermal protection required.

For complete instructions, refer to the UnidriveSP User Guide.

115vac AC Logic Interface Kits

P/N 3572-0150P08-16



Universal 115vac
Power Supply accepts
208/230/380/415/480v
AC input

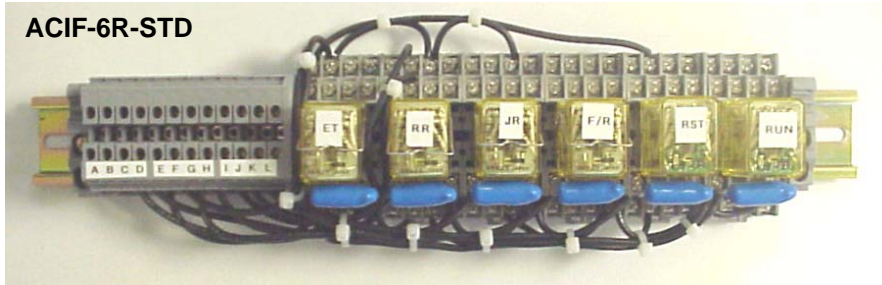
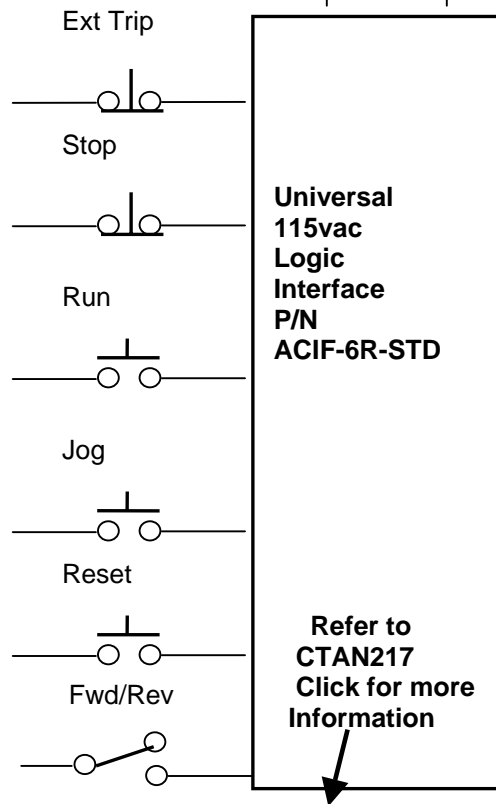
P/N 3572-0150P08-16

115vac
50va
max

These options allow the newer drives to be easily interfaced to the original 115vac control operator devices.

These components are stocked and sold through the North American Service Center

To order please contact sales @ 716-774-1193



http://www.emersonct.com/download_usa/appNotes/CTAN217.pdf

Questions: Ask the author ??

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