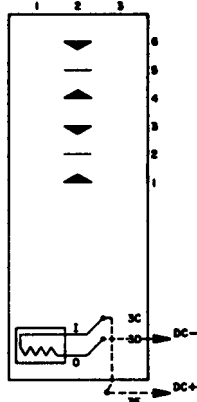
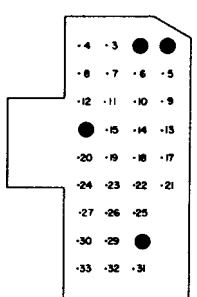




## Specification for Type ST Plug-in Relay Neutral Relay, Slow Release 2FB Contacts, 460 Ohm

| Characteristic              |                             | Original Requirements                     | Contact/Coil Arrangement  |  |
|-----------------------------|-----------------------------|---|---|--|
| Coils                       | Nominal V or I              | 10-12 VDC                                 | (Front of Relay)<br><br> |  |
|                             | Resistance/Tolerance        | 460 Ohm ±5% (Single Coil)                 |   |  |
| Temperature Range           |                             | -40C (-40F) to 85C (185F)                 |   |  |
| P.U./W.C.                   | Voltage                     | 6.44 Volts Maximum                        |   |  |
|                             | Current                     | 14 milliamps Maximum                      |   |  |
|                             | Speed                       | Pickup                                    |   | Regular  |
| Dropaway                    | Voltage                     | .644 Volts Minimum                        |   |  |
|                             | Current                     | 1.4 milliamps Minimum                     |   |  |
|                             | Speed                       | Release                                   |   | 3.0 Seconds + 10% Delay @ 9 volts  |
| Contacts                    | Arrangement                 | 2FB                                       |   | Relay register<br>(Rear of Relay)<br><br> |
|                             | Rating                      | 4 Amps/30 Volts                           |   |  |
|                             | Material                    | N.O.                                      | Silver/Carbon   |  |
|                             |                             | N.C.                                      | Silver/Silver   |  |
|                             | Dynamic Gap                 |   | .020" Minimum   |  |
|                             | Contact Gap                 |   | .050" Minimum   |  |
|                             | Pressure                    | N.O.                                      | 40 Grams Minimum  |  |
|                             |                             | N.C.                                      | 21 Grams Minimum  |  |
|                             | Overtravel per Adjustment A |   | *See Note #1 Below  |  |
|                             | Resistance                  | N.O.                                      | 90 milliohms Maximum<br>@10 VDC, 1.0 Amps   |  |
| N.C.                        |                             | 30 milliohms Maximum<br>@10 VDC, 1.0 Amps |   |  |
| Armature Travel             |                             | .087" Minimum                             |   |  |
| Retainer Gap Reference      |                             | .002" to .004"                            |   |  |
| Residual Screw (Adjustable) |                             | .004" Minimum                             |   |  |
| Stop Pin (Fixed)            |                             | .003" Minimum                             |   |  |

### Notes

- #1 N.O. Contacts to make with .032" and break with .041" between armature residual screw and core.  
N.C. Contacts to make with .066" and break with .059" between armature residual screw and core.
- #2 Adjust armature compression spring to have one ounce (28.4 grams) minimum at the adjustable residual screw to raise the armature stop screw from its stop.

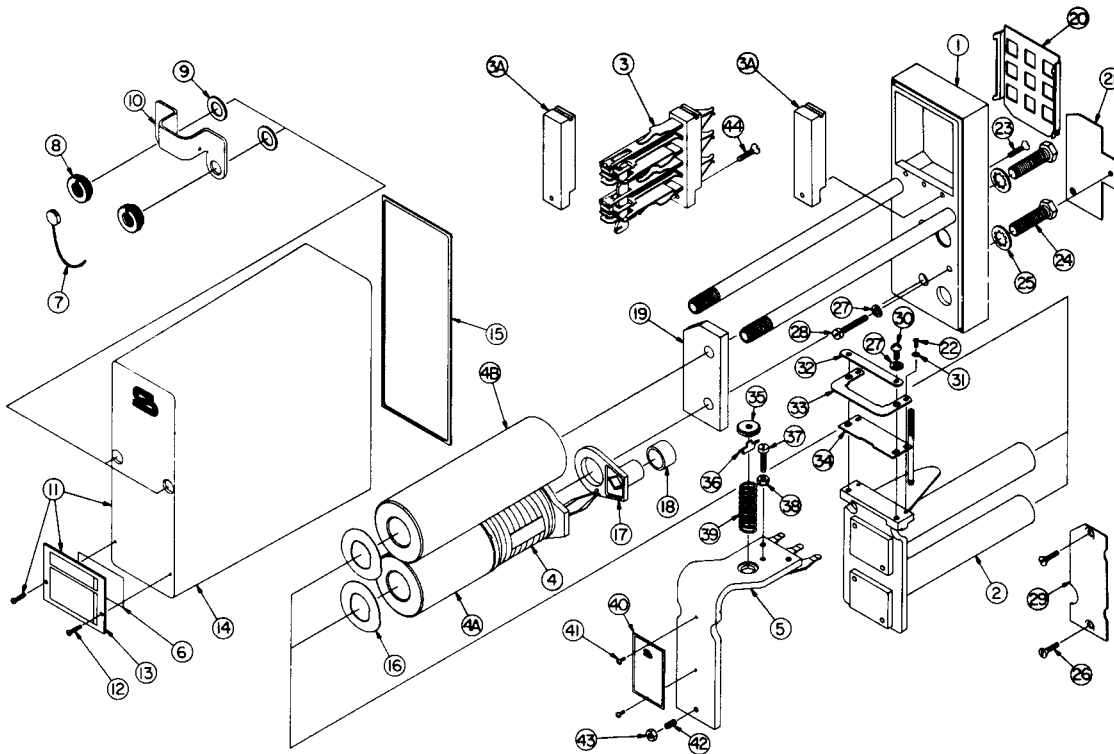
### Field Requirements

Drop Away Value — Not less than 70% of original marking.  
Pickup/Working Value — Not greater than 110% of original marking.

### Shop Requirements

Drop Away Value — Not less than 95% of original marking.  
Pickup/Working Value — Not greater than 105% of original marking.

# Type ST Plug-in Relay Assembly and Replacement Parts Part Number 400213



To order, specify description and part number.

| Item No. | Description                       | Qty. Req'd. | Part Number | Item No. | Description                                  | Qty. Req'd. | Part Number |
|----------|-----------------------------------|-------------|-------------|----------|--|-------------|-------------|
| 1        | Base Assembly, Plug-in Relay      | 1           | 420050-1X   | 22       | Machine Screw, Fillister Head, #4-40 X .250" | 2           | 420053-14   |
| 2        | Frame Assembly, Coil              | 1           | 420053-7X   | 23       | Machine Screw, Flat Head, #6-32 .375"        | 2           | 420052-2    |
| 3        | Stack, 2FB Contact                | 1           | 420052-1X   | 24       | Machine Screw, Hex Head, 5/16"-24 X 1.125"   | 2           | 420053-12   |
| 3A       | Stack, Blank Contact              | 2           | 420052-3    | 25       | Washer, Spring Lock, I, 5/16"                | 2           | 420053-13   |
| 4        | Coil Assembly, 460 Ohm            | 1           | 420051-32X  | 26       | Machine Screw, Flat Head, #6-32 X .5"        | 2           | 420050-36   |
| 4A       | Slug, Copper                      | 1           | 420051-6    | 27       | Washer, Spring Lock, I, #8                   | 3           | 420050-33   |
| 4B       | Slug, Copper                      | 1           | 420051-7    | 28       | Machine Screw, Fillister Head, #8-32 X .937" | 1           | 420050-32   |
| 5        | Armature                          | 1           | 420053-1X   | 29       | Plate, Code Pin                              | 1           | 420050-105  |
| 6        | Label, Paper Identification       | 1           | 420050-3    | 30       | Machine Screw, Pan Head, #8-32 X .375"       | 2           | 420053-16   |
| 7        | Seal, Lead                        | 1           | 420050-8    | 31       | Washer, Spring Lock, I, #4                   | 2           | 420053-15   |
| 8        | Nut, Knurl, Locking               | 2           | 420050-5    | 32       | Plate, Retainer                              | 1           | 420053-3    |
| 9        | Washer, Flat Rubber               | 2           | 420050-7    | 33       | Retainer, Armature                           | 1           | 420053-2    |
| 10       | Bracket, Cover                    | 1           | 420050-4    | 34       | Plate, Hinge                                 | 1           | 420053-1    |
| 11       | Cover Assembly                    | 1           | 420050-2X   | 35       | Nut, Spring Post                             | 1           | 420053-6    |
| 12       | Tap Screw, Round Head, #4 X .375" | 2           | 420050-35   | 36       | Key, Spring Retainer                         | 1           | 420053-5    |
| 13       | Cover, Nameplate                  | 1           | 420050-2    | 37       | Screw, Tailstop                              | 1           | 420053-9    |
| 14       | Molded Cover, Clear               | 1           | 420050      | 38       | Nut, Tailstop                                | 1           | 420053-8    |
| 15       | Gasket, Cover                     | 1           | 420050-1    | 39       | Spring, Compression                          | 1           | 420053-4    |
| 16       | Washer, Spring                    | 2           | 420053-42   | 40       | Nameplate, Type ST Relay                     | 1           | 420053-67   |
| 17       | Insulator, Terminal Retainer      | 1           | 420051-8    | 41       | Phillips Screw, Pan Head, #4-40 X .187"      | 2           | 420053-18   |
| 18       | Seal, Rubber                      | 1           | 420051-1    | 42       | Screw, Residual                              | 1           | 420053-11   |
| 19       | Plate, Base                       | 1           | 420053      | 43       | Nut, Residual                                | 1           | 420053-10   |
| 20       | Seal, Dust                        | 1           | 420052      | 44       | Machine Screw, Flat Head, #6-32 X .531"      | 1           | 420050-36   |
| 21       | Plate, Code                       | 1           | 420050-517  |          |  |             |             |

**Safetran Systems Corporation**

2400 Nelson Miller Parkway

Louisville, Kentucky 40223

502-244-7400