



**HV1 and HV2 -- High-Voltage TTY Loops (1/4" phone jacks)
(60-mA or 20-mA, for M15, M28...)**

- Note 1: HV1 and HV2 loop supplies may be configured for 80VDC (recommended) or 160VDC:
 - 80VDC (nominal): wire T50/70 primary in series (see sheet 1)
 - 160VDC (nominal): wire T50/70 primary in parallel (see sheet 1)
 - See notes 5, 6, and 7 below for power resistor selection.
- Note 2: HV2 loop schematic is identical to HV1. Part numbers are related as follows:
 HV1: reference designators 50 to 69 (eg: R51)
 HV2: reference designators 70 to 89 (eg: R71)
- Note 3: In Half-Duplex mode, HV1-IN and HV1-OUT are for series-connected keyboard/TD contacts, and/or selector magnets
 In Full-Duplex mode, HV1-IN is for keyboard/TD contacts only, and HV1-OUT is for selector magnets only
 Conventions for TTY line cable plug colors:
 - HV1-IN (tty-tx): Black (or Brown, or Green)
 - HV1-OUT (tty-rx): Red (or Gray)
- Note 4: R51, R57, R58, and R59 are 10W chassis-mount power resistors, mounted on appropriate heatsink
- Note 5: R51 is only used in full-duplex mode, and sets ~ 30-mA in HV1-IN (keyboard/TD) loop:
 For 80VDC loop supply, R51 is 3K. For 160VDC loop supply, R51 is 5K.
- Note 6: HV1-OUT loop is normally set to ~ 60-mA, but can be configured for ~ 20-mA:
 For ~ 60-mA, install jumper between E54 and E55
 For ~ 20-mA, install R57 between E54 and E55
 For 80VDC loop supply, R57 is 2.7K. For 160VDC loop supply, R57 is 5K.
- Note 7: R58 and R59 set ~ 60-mA in HV1-OUT (keying) loop (when E54/E55 is jumpered):
 For 80VDC loop supply, R58/59 are 5K and 2K
 For 160VDC loop supply, R58/59 are both 5K.