

Dimmer Doubler™

User Manual

Revision A



The Dimmer Doubler is
protected by US patent
#5,323,088.

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Dimmer Doubler™ Technology

ETC's Dimmer Doubler™ technology allows you to double the number of fixtures in your system without adding dimmer modules or running additional cable. The key to this system is the Dimmer Doubler.

The Dimmer Doubler is installed between a Sensor dimmer module and two ETC Source Four 77 volt fixtures. It splits the output of a single dimmer into two, separately-controlled outputs. You can then use an ETC control console to independently control the output of the two fixtures.

To take advantage of the benefits of ETC Dimmer Doubler technology, the following elements are required:

- Source Four fixtures with UL Listed connectors and HPL 550/77 lamps
- Dimmer Doublers with UL Listed input and output connectors
- Sensor dimming equipment with CEM electronics
- Control console with electronic patch and a minimum of one DMX512 output

Each DMX512 output can control 256 dimmers operating as 512 Dimmer Doubled channels. Systems with more than 256 dimmers must have two DMX512 outputs in the rack and the console.

Configuration

Source Four Fixtures

Source Four fixtures must be equipped/modified in the following ways to be used in Dimmer Doubled dimming systems.



CAUTION: *Dimmer Doublers and Source Four fixtures are UL Listed as an integrated system using the connectors indicated in this manual. They are not UL Listed when used with any other connector.*

Connector for Source Four fixtures used with Dimmer Doublers

The UL Listed connector for a Source Four fixture used with a Dimmer Doubler is the NEMA L2-15P: 15A, 125V, two-pole, three wire, grounding Twist-Lock[®] connector. These connectors may be ordered installed from the factory for a charge, or they can be installed by the customer.

Lamp Cap Modification

The HPL 550/77 lamp has a third pin on the lamp base that prevents it from being inadvertently installed in a standard line-voltage fixture. The Phillips-head screw next to the socket in the lamp cap must be removed before a 77V lamp can be installed.

550W/77V Lamp

The light output of the Source Four fixture using an HPL 550/77 lamp is equivalent to the performance of the same fixture equipped with a 575W/115V lamp. Equal performance at 25 fewer Watts is due to the smaller filament on the 77V lamp.



WARNING: *DO NOT operate Source Four fixtures with HPL 550/77 lamps on standard line voltage dimming circuits or outlets.*

Dimmer Doubler



CAUTION: *Dimmer Doublers and Source Four fixtures are UL Listed as an integrated system using the connectors indicated in this manual. They are not UL Listed when used with any other connector.*

Dimmer Doubler Input Connector

The Dimmer Doubler is UL Listed only when the input (single cable) side is equipped with one of the following connector types:

- Two pin and ground (2P&G), 20A pin connector
- Grounded 20A Twist-Lock[®] connector, NEMA L5-20P

These connectors may be ordered installed from the factory for a charge, or they can be installed by the customer.

Dimmer Doubler Load Connectors

Dimmer Doublers are supplied with installed NEMA L5-15R 15A 125V two-pole, three-wire, grounded Twist-Lock[®] connectors. The UL Listing for the Dimmer Doubler requires that it be provided with both load connectors installed.

Sensor Dimmers

To set up a Sensor CEM dimming system running v3.1 software or later for use with Dimmer Doublers, you must use the Sensor Control Electronics Module (CEM) to put the specific dimmer(s) that will be connected to Dimmer Doublers into Dimmer Doubler mode.

Dimmer Doublers are provided with built-in circuit mimic lamps that show when the circuits are energized. They are labeled “A” and “B” and reflect the individual output of each circuit.

Enable dimmer(s) for Dimmer Doubler operation:

Step 1: On the Sensor CEM, press **[Setup] [1]**.

Step 2: Use the number keys to enter the number of the dimmer you want to put into Dimmer Doubler mode and press **[Enter]**.



Step 3: Press **[↓] [↓] [↓] [Enter]** to select Dimmer Doubler mode. The display is shown above.

Step 4: Select another dimmer number to edit or press **[Exit]** once to return to the Setup display, or twice to return to the Status display.

Control Consoles

For information on using Dimmer Doubling technology with Obsession II, Express, Expression 3/Insight 3 and Emphasis Control Systems, please see each console's user manual.

The output of a dimmer in Dimmer Doubler mode is split into two halves. The individual halves can be controlled separately. On ETC consoles, for example, the halves of dimmer 1 become dimmers 1A and 1B. On other consoles, these dimmers are patched as dimmer 1 and 257. The "A" side of doubled dimmers is assigned to DMX 1-256 and the "B" side of those dimmers is assigned to DMX 257-512. Dimmers operating in Normal mode are controlled by their corresponding "A" side number.

You can patch doubled dimmers to any channel, just as you would with "normal" dimmers. you do not need to patch the "A" and "B" sides of the same dimmer to the same channel. You can also apply different proportions in a proportional patch to the "A" and "B" sides of the same dimmer.

The table below shows dimmers 1 and 3 doubled, and dimmers 2 and 4 in Normal mode:

| Output | Console Patch Display | Output Controlled | Mode of Operation |
|--------|-----------------------|-------------------|-------------------|
| 1A | Dimmer 1 | 1A | Dimmer Doubled |
| 1B | Dimmer 257 | 1B | Dimmer Doubled |
| 2A | Dimmer 2 | 2 | Normal |
| 2B | Dimmer 258 | None | Not Used |
| 3A | Dimmer 3 | 3A | Dimmer Doubled |
| 3B | Dimmer 259 | 3B | Dimmer Doubled |
| 4A | Dimmer 4 | 4 | Normal |
| 4B | Dimmer 260 | None | Not Used |

The following chart shows the actual correlation between the "A" and "B" outputs and the actual DMX512 numbers you would use to access each half of the doubled dimmer. It is a handy patching guide for use when not taking advantage of the built-in patch functions of an ETC console.

A/B Doubled Dimmer Pairs to Corresponding DMX512 Addresses — DMX512 Input A (1st Universe)

Example: Doubled dimmer pair 151A and 151B correspond to DMX Addresses 151 and 407.

| A/B | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | A/B |
|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| 1 | 1 / 257 | 2 / 258 | 3 / 259 | 4 / 260 | 5 / 261 | 6 / 262 | 7 / 263 | 8 / 264 | 9 / 265 | 10 / 266 | 10 |
| 11 | 11 / 267 | 12 / 268 | 13 / 269 | 14 / 270 | 15 / 271 | 16 / 272 | 17 / 273 | 18 / 274 | 19 / 275 | 20 / 276 | 20 |
| 21 | 21 / 277 | 22 / 278 | 23 / 279 | 24 / 280 | 25 / 281 | 26 / 282 | 27 / 283 | 28 / 284 | 29 / 285 | 30 / 286 | 30 |
| 31 | 31 / 287 | 32 / 288 | 33 / 289 | 34 / 290 | 35 / 291 | 36 / 292 | 37 / 293 | 38 / 294 | 39 / 295 | 40 / 296 | 40 |
| 41 | 41 / 297 | 42 / 298 | 43 / 299 | 44 / 300 | 45 / 301 | 46 / 302 | 47 / 303 | 48 / 304 | 49 / 305 | 50 / 306 | 50 |
| 51 | 51 / 307 | 52 / 308 | 53 / 309 | 54 / 310 | 55 / 311 | 56 / 312 | 57 / 313 | 58 / 314 | 59 / 315 | 60 / 316 | 60 |
| 61 | 61 / 317 | 62 / 318 | 63 / 319 | 64 / 320 | 65 / 321 | 66 / 322 | 67 / 323 | 68 / 324 | 69 / 325 | 70 / 326 | 70 |
| 71 | 71 / 327 | 72 / 328 | 73 / 329 | 74 / 330 | 75 / 331 | 76 / 332 | 77 / 333 | 78 / 334 | 79 / 335 | 80 / 336 | 80 |
| 81 | 81 / 337 | 82 / 338 | 83 / 339 | 84 / 340 | 85 / 341 | 86 / 342 | 87 / 343 | 88 / 344 | 89 / 345 | 90 / 346 | 90 |
| 91 | 91 / 347 | 92 / 348 | 93 / 349 | 94 / 350 | 95 / 351 | 96 / 352 | 97 / 353 | 98 / 354 | 99 / 355 | 100 / 356 | 100 |
| 101 | 101 / 357 | 102 / 358 | 103 / 359 | 104 / 360 | 105 / 361 | 106 / 362 | 107 / 363 | 108 / 364 | 109 / 365 | 110 / 366 | 110 |
| 111 | 111 / 367 | 112 / 368 | 113 / 369 | 114 / 370 | 115 / 371 | 116 / 372 | 117 / 373 | 118 / 374 | 119 / 375 | 120 / 376 | 120 |
| 121 | 121 / 377 | 122 / 378 | 123 / 379 | 124 / 380 | 125 / 381 | 126 / 382 | 127 / 383 | 128 / 384 | 129 / 385 | 130 / 386 | 130 |
| 131 | 131 / 387 | 132 / 388 | 133 / 389 | 134 / 390 | 135 / 391 | 136 / 392 | 137 / 393 | 138 / 394 | 139 / 395 | 140 / 396 | 140 |
| 141 | 141 / 397 | 142 / 398 | 143 / 399 | 144 / 400 | 145 / 401 | 146 / 402 | 147 / 403 | 148 / 404 | 149 / 405 | 150 / 406 | 150 |
| 151 | 151 / 407 | 152 / 408 | 153 / 409 | 154 / 410 | 155 / 411 | 156 / 412 | 157 / 413 | 158 / 414 | 159 / 415 | 160 / 416 | 160 |
| 161 | 161 / 417 | 162 / 418 | 163 / 419 | 164 / 420 | 165 / 421 | 166 / 422 | 167 / 423 | 168 / 424 | 169 / 425 | 170 / 426 | 170 |
| 171 | 171 / 427 | 172 / 428 | 173 / 429 | 174 / 430 | 175 / 431 | 176 / 432 | 177 / 433 | 178 / 434 | 179 / 435 | 180 / 436 | 180 |
| 181 | 181 / 437 | 182 / 438 | 183 / 439 | 184 / 440 | 185 / 441 | 186 / 442 | 187 / 443 | 188 / 444 | 189 / 445 | 190 / 446 | 190 |
| 191 | 191 / 447 | 192 / 448 | 193 / 449 | 194 / 450 | 195 / 451 | 196 / 452 | 197 / 453 | 198 / 454 | 199 / 455 | 200 / 456 | 200 |
| 201 | 201 / 457 | 202 / 458 | 203 / 459 | 204 / 460 | 205 / 461 | 206 / 462 | 207 / 463 | 208 / 464 | 209 / 465 | 210 / 466 | 210 |
| 211 | 211 / 467 | 212 / 468 | 213 / 469 | 214 / 470 | 215 / 471 | 216 / 472 | 217 / 473 | 218 / 474 | 219 / 475 | 220 / 476 | 220 |
| 221 | 221 / 477 | 222 / 478 | 223 / 479 | 224 / 480 | 225 / 481 | 226 / 482 | 227 / 483 | 228 / 484 | 229 / 485 | 230 / 486 | 230 |
| 231 | 231 / 487 | 232 / 488 | 233 / 489 | 234 / 490 | 235 / 491 | 236 / 492 | 237 / 493 | 238 / 494 | 239 / 495 | 240 / 496 | 240 |
| 241 | 241 / 497 | 242 / 498 | 243 / 499 | 244 / 500 | 245 / 501 | 246 / 502 | 247 / 503 | 248 / 504 | 249 / 505 | 250 / 506 | 250 |
| 251 | 251 / 507 | 252 / 508 | 253 / 509 | 254 / 510 | 255 / 511 | 256 / 512 | | | | | 256 |

A/B Doubled Dimmer Pairs to Corresponding DMX512 Addresses — DMX512 Input B (2nd Universe)

Example: Doubled dimmer pair 651A and 651B correspond to DMX Addresses 651 and 907.

| A/B | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | A/B |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 513 | | | 513 / 769 | 514 / 770 | 515 / 771 | 516 / 772 | 517 / 773 | 518 / 774 | 519 / 775 | 520 / 776 | 520 |
| 521 | 521 / 777 | 522 / 778 | 523 / 779 | 524 / 780 | 525 / 781 | 526 / 782 | 527 / 783 | 528 / 784 | 529 / 785 | 530 / 786 | 530 |
| 531 | 531 / 787 | 532 / 788 | 533 / 789 | 534 / 790 | 535 / 791 | 536 / 792 | 537 / 793 | 538 / 794 | 539 / 795 | 540 / 796 | 540 |
| 541 | 541 / 797 | 542 / 798 | 543 / 799 | 544 / 800 | 545 / 801 | 546 / 802 | 547 / 803 | 548 / 804 | 549 / 805 | 550 / 806 | 550 |
| 551 | 551 / 807 | 552 / 808 | 553 / 809 | 554 / 810 | 555 / 811 | 556 / 812 | 557 / 813 | 558 / 814 | 559 / 815 | 560 / 816 | 560 |
| 561 | 561 / 817 | 562 / 818 | 563 / 819 | 564 / 820 | 565 / 821 | 566 / 822 | 567 / 823 | 568 / 824 | 569 / 825 | 570 / 826 | 570 |
| 571 | 571 / 827 | 572 / 828 | 573 / 829 | 574 / 830 | 575 / 831 | 576 / 832 | 577 / 833 | 578 / 834 | 579 / 835 | 580 / 836 | 580 |
| 581 | 581 / 837 | 582 / 838 | 583 / 839 | 584 / 840 | 585 / 841 | 586 / 842 | 587 / 843 | 588 / 844 | 589 / 845 | 590 / 846 | 590 |
| 591 | 591 / 847 | 592 / 848 | 593 / 849 | 594 / 850 | 595 / 851 | 596 / 852 | 597 / 853 | 598 / 854 | 599 / 855 | 600 / 856 | 600 |
| 601 | 601 / 857 | 602 / 858 | 603 / 859 | 604 / 860 | 605 / 861 | 606 / 862 | 607 / 863 | 608 / 864 | 609 / 865 | 610 / 866 | 610 |
| 611 | 611 / 867 | 612 / 868 | 613 / 869 | 614 / 870 | 615 / 871 | 616 / 872 | 617 / 873 | 618 / 874 | 619 / 875 | 620 / 876 | 620 |
| 621 | 621 / 877 | 622 / 878 | 623 / 879 | 624 / 880 | 625 / 881 | 626 / 882 | 627 / 883 | 628 / 884 | 629 / 885 | 630 / 886 | 630 |
| 631 | 631 / 887 | 632 / 888 | 633 / 889 | 634 / 890 | 635 / 891 | 636 / 892 | 637 / 893 | 638 / 894 | 639 / 895 | 640 / 896 | 640 |
| 641 | 641 / 897 | 642 / 898 | 643 / 899 | 644 / 900 | 645 / 901 | 646 / 902 | 647 / 903 | 648 / 904 | 649 / 905 | 650 / 906 | 650 |
| 651 | 651 / 907 | 652 / 908 | 653 / 909 | 654 / 910 | 655 / 911 | 656 / 912 | 657 / 913 | 658 / 914 | 659 / 915 | 660 / 916 | 660 |
| 661 | 661 / 917 | 662 / 918 | 663 / 919 | 664 / 920 | 665 / 921 | 666 / 922 | 667 / 923 | 668 / 924 | 669 / 925 | 670 / 926 | 670 |
| 671 | 671 / 927 | 672 / 928 | 673 / 929 | 674 / 930 | 675 / 931 | 676 / 932 | 677 / 933 | 678 / 934 | 679 / 935 | 680 / 936 | 680 |
| 681 | 681 / 937 | 682 / 938 | 683 / 939 | 684 / 940 | 685 / 941 | 686 / 942 | 687 / 943 | 688 / 944 | 689 / 945 | 690 / 946 | 690 |
| 691 | 691 / 947 | 692 / 948 | 693 / 949 | 694 / 950 | 695 / 951 | 696 / 952 | 697 / 953 | 698 / 954 | 699 / 955 | 700 / 956 | 700 |
| 701 | 701 / 957 | 702 / 958 | 703 / 959 | 704 / 960 | 705 / 961 | 706 / 962 | 707 / 963 | 708 / 964 | 709 / 965 | 710 / 966 | 710 |
| 711 | 711 / 967 | 712 / 968 | 713 / 969 | 714 / 970 | 715 / 971 | 716 / 972 | 717 / 973 | 718 / 974 | 719 / 975 | 720 / 976 | 720 |
| 721 | 721 / 977 | 722 / 978 | 723 / 979 | 724 / 980 | 725 / 981 | 726 / 982 | 727 / 983 | 728 / 984 | 729 / 985 | 730 / 986 | 730 |
| 731 | 731 / 987 | 732 / 988 | 733 / 989 | 734 / 990 | 735 / 991 | 736 / 992 | 737 / 993 | 738 / 994 | 739 / 995 | 740 / 996 | 740 |
| 741 | 741 / 997 | 742 / 998 | 743 / 999 | 744 / 1000 | 745 / 1001 | 746 / 1002 | 747 / 1003 | 748 / 1004 | 749 / 1005 | 750 / 1006 | 750 |
| 751 | 751 / 1007 | 752 / 1008 | 753 / 1009 | 754 / 1010 | 755 / 1011 | 756 / 1012 | 757 / 1013 | 758 / 1014 | 759 / 1015 | 760 / 1016 | 760 |
| | 761 / 1017 | 762 / 1018 | 763 / 1019 | 764 / 1020 | 765 / 1021 | | | | | | |



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