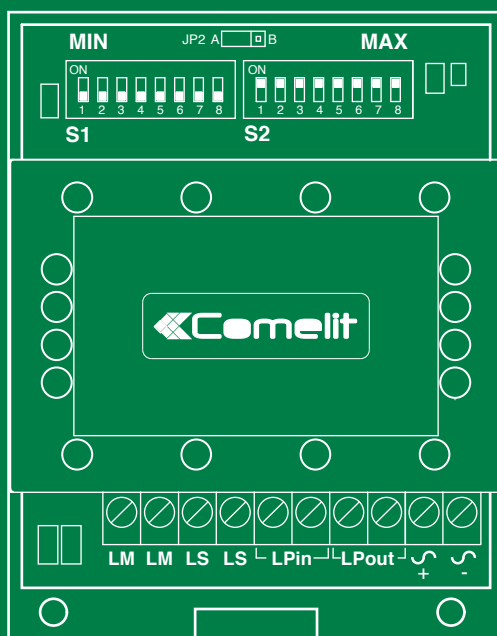


EN

TECHNICAL  
MANUAL



Digital switching module  
Art. 1424

 **Comelit**<sup>®</sup>  
Passion. Technology. Design.

# Warning

## Intended use

This Comelit product was designed for use in the creation of audio and video communication systems in residential, commercial or industrial settings and in public buildings or buildings used by the public.

## Installation

All activities connected to the installation of Comelit products must be carried out by qualified technical personnel, with careful observation of the indications provided in the Manuals / Instruction sheets supplied with those products.

## Wires

Cut off the power supply before carrying out any maintenance procedures.

Use wires with a cross-section suited to the distances involved, observing the instructions provided in the system manual.

We advise against running the system wires through the same duct as the power cables (230V or higher).

## Safe usage

To ensure Comelit products are used safely:

- carefully observe the indications provided in the Manuals / Instruction sheets
- make sure the system created using Comelit products has not been tampered with / damaged.

## Maintenance

Comelit products do not require maintenance aside from routine cleaning, which should be carried out in accordance with the indications provided in the Manuals / Instruction sheets.

Any repair work must be carried out

- for the products themselves, exclusively by **Comelit Group S.p.A.**,
- for systems, by qualified technical personnel.

## Disclaimer

**Comelit Group S.p.A.** does not assume any responsibility for

- any usage other than the intended use
- non-observance of the indications and warnings contained in this Manual / Instruction sheet.

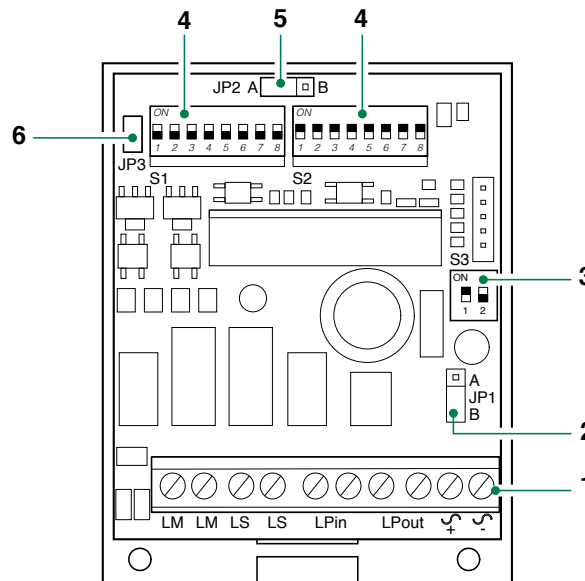
**Comelit Group S.p.A.** nonetheless reserves the right to change the information provided in this Manual / Instruction sheet at any time and without prior notice.

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# Description

Art. 1424 is an audio/video switching module which can be used in SBTOP audio/video systems and SB1 audio systems. To be used in systems with more than one entrance.



**1. System connection terminals:**

- LM LM** riser Bus line output
- LS LS** secondary Bus line input (normally switched to LM LM)
- LPin LPin** main Bus line input (normally open on LM LM)
- LPout LPout** main Bus line output for cascade distribution setup
- ~ + ~ - 12Vac/20Vdc power supply input.

**2 JP1** controls the self-powering function of the secondary line:

- in position, **A**, the function is active
- in position **B**, the function is inactive (default setting).

**3** Microswitches **S3** are used to select the operating mode (set by default to TOP 1, see [TOP 1 mode \(default mode\)](#)).

| Mode           | DIP1 | DIP2 |
|----------------|------|------|
| Standard       | OFF  | OFF  |
| TOP1 (default) | ON   | OFF  |
| TOP2           | ON   | ON   |
| TOP3           | OFF  | ON   |

**4** Microswitches **S1, S2** are used to set user or zone addresses.

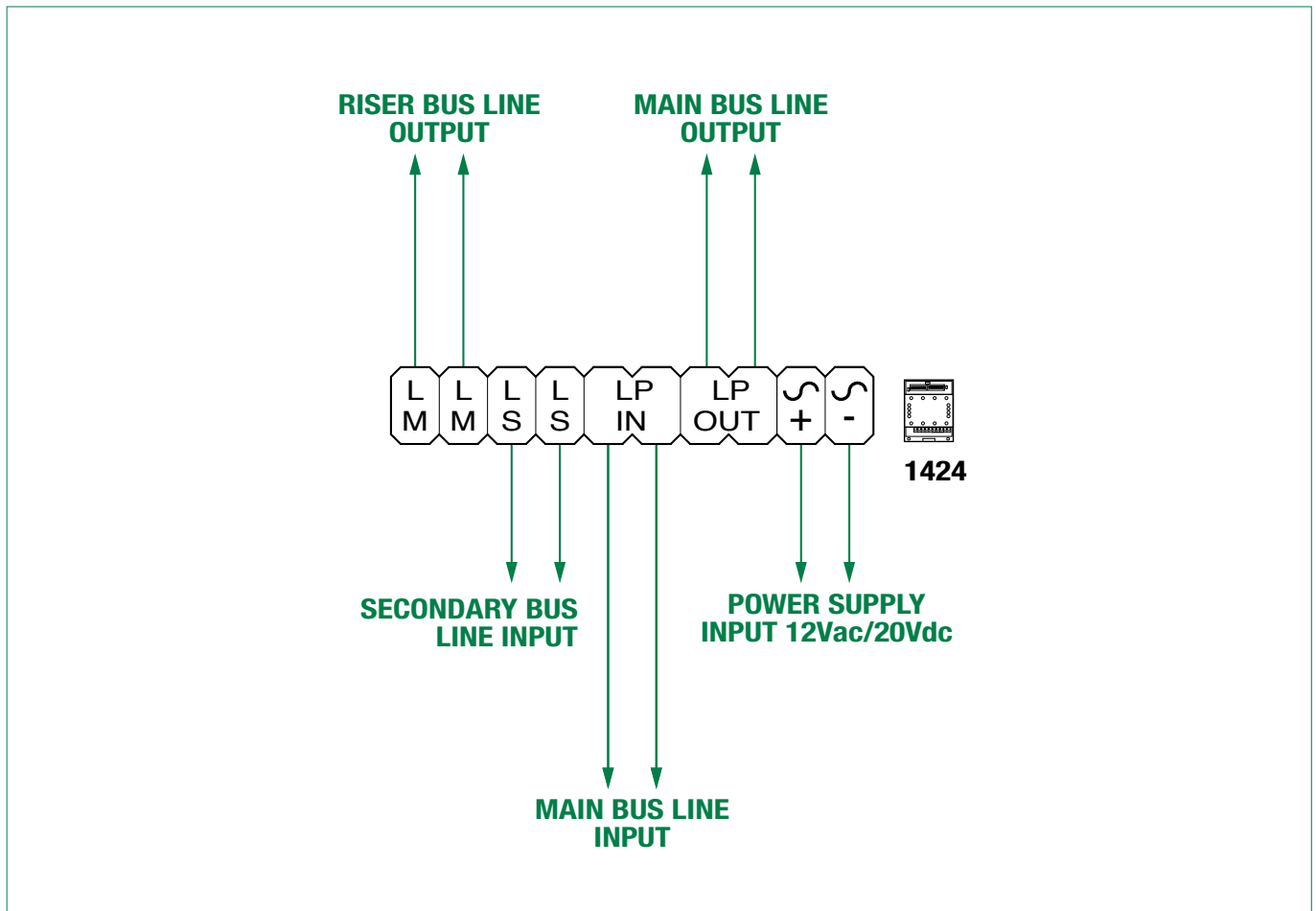
**5 JP2** controls zone addresses:

- position **A** for zone addresses from 1 to 250 (default setting)
- position **B** for zone addresses from 251 to 500.

**6 JP3** jumper for video closure.

It should be left activated, on the last switching device in a system with cascade distribution setup, and on all switching devices in systems with star distribution setup (see [SBTOP audio/video system](#)).

# Connection



## Operation and Programming

Switching device Art. 1424 is used to create Simplebus systems with over 240 users, up to a maximum of 120,000. It also optimises the connection topology for the part of the system before the mixers Art. 4888 and Art. 4888C. It can also be used to create multi-villa systems with entrances and porter switchboards; centralising up to 500 Comelit Simplebus KITS. Furthermore, the device also makes it possible to control several switchboards within a system and offers alarm signalling to those particular switchboards.

Switching device Art. 1424 has 4 operating modes, selected in accordance with the type of device used and its position within the system:

**STANDARD** identical to that of Art. 1224A

**TOP 1** individual zone switching in systems without switchboard or with a single switchboard

**TOP 2** individual zone switching in systems with multiple switchboards

**TOP 3** multi-zone switching

### Standard mode

For **STANDARD** mode operation, set the S3 dip switches to **OFF**.

Each switching module is equipped with a pair of dip switches with 8 selectors:

**S1** defines the minimum value **MIN** of the range

**S2** defines the maximum value **MAX** of the range of user codes controlled by each riser.

For information on setting the desired values, refer to the [Programming table for dip-switches](#).



**CAUTION!** Separate switching devices must manage code ranges which are not overlapping.

## TOP 1 mode (default mode)

For TOP 1 mode operation, set the S3 dip switches as follows:

DIP 1- ON      DIP 2- OFF

The switching device defines an area of the system (called a ZONE) which is identified by the address set by means of the **S1** dip switch selectors and the positioning of **JP2**.

The address is a number between 1 and 500, and cannot be a range; the zone address is set using dip switch **S1** (in accordance with the [Programming table for dip-switches](#)) and **JP2**, which should be set to **A** for managing addresses from 1 to 250, or to **B** for addresses from 251 to 500.

The **LM-LM output** of each switching device may be wired (as for a normal Simplebus Color system) with up to 240 users with mixers Art. 4888C and accessories (Art. 1256, Art. 1259C, 1224A, 1257); NOT the porter switchboard Art. 1998A or Art. 1998VC.

The **LS-LS input** of the switching device may be wired with entrances in STANDARD mode and accessories (Art. 1256, Art. 1259C, 1224A, 1257).

On the **LPin-LPin input**, the wired entrances must be set to TOP mode and a single switchboard Art. 1998A or Art. 1998VC may be installed (in SINGLE, SERIES or PARALLEL mode). All calls to the switchboard from door-entry phones or monitors are directed to the only switchboard in the system. It is NOT possible to control internal ignition via entrances wired to the LPin-LPin input of switching device Art. 1424.

 **CAUTION!** The same system cannot contain 2 switching devices Art. 1424 with the same ZONE address.

## TOP 2 mode

For TOP 2 mode operation, set the S3 dip switches as follows:

DIP 1- ON      DIP 2- ON

The switching device defines an area of the system (called a ZONE) which is identified by the address set by means of the **S1** dip switch selectors and the positioning of **JP2**.

The address is a number between 1 and 500, and cannot be a range; the zone address is set using dip switch **S1** (in accordance with the [Programming table for dip-switches](#)) and **JP2**, which should be set to **A** for managing addresses from 1 to 250, or to **B** for addresses from 251 to 500.

The **LM-LM output** of each switching device may be wired with up to 240 users with mixers Art. 4888C, accessories (Art. 1256, Art. 1259, 1224A, 1257) AND a porter switchboard Art. 1998A or Art. 1998VC.

The **LS-LS input** of the switching device may be wired with secondary entrances in STANDARD mode and accessories.

On the **LPin-LPin input**, the wired entrances must be set to TOP mode and up to two main switchboards Art. 1998A or Art. 1998VC may be installed (in SERIES or PARALLEL mode). Door-entry phones and monitors may call the secondary switchboard on its own riser, or the main switchboard, in differentiated mode. It is NOT possible to control internal ignition via entrances wired to the **LPin-LPin** input of switching device Art. 1424.

 **CAUTION!** The same system cannot contain 2 switching devices Art. 1424 with the same ZONE address.

## TOP 3 mode

For TOP 3 mode operation, set the S3 dip switches as follows:

DIP 1- OFF      DIP 2- ON

The switching device should be used to wire all the main entrances in the part of the system leading into the **LPin-LPin** terminals of switching devices Art. 1424 in TOP 1 or TOP 2 mode. Switching device Art. 1424 in TOP 3 mode controls the ZONES covered by the set range. The ranges are set using dip switch **S1**, **S2** (in accordance with the [Programming table for dip-switches](#)) and **JP2**.

The range may be **EXTENDED** from 1 to 500 (by setting the **S1** dip switches to OFF, the **S2** dip switches to ON and **JP2** to A) or **LIMITED**, but only for the intervals between 1 and 250 (by setting **S1** to the MIN range, **S2** to the MAX range and **JP2** to A) or from 251 to 500 (by setting **S1** to the MIN range, **S2** to the MAX range and **JP2** to B).

 **CAUTION!** Separate switching devices must manage code ranges which are not overlapping.

The TOP 3 switching device may only be wired with external units in TOP mode. In the presence of main porter switchboards Art. 1998A or Art. 1998VC, the TOP 3 switching device should only be installed BEFORE the main switchboard. It is NOT possible to control internal ignition via entrances wired to the LPin-LPin input of switching device Art. 1424.

**Example:**

|                 |  |                      |  |          |  |
|-----------------|--|----------------------|--|----------|--|
| <b>STANDARD</b> |  | RANGE 1÷10           |  |          |  |
| <b>TOP 1</b>    |  | ZONE 2               |  | ZONE 260 |  |
| <b>TOP 2</b>    |  | ZONE 3               |  | ZONE 261 |  |
| <b>TOP 3</b>    |  | EXTENDED RANGE 1÷500 |  |          |  |
|                 |  | ZONES 2÷10           |  |          |  |
|                 |  | ZONES 300÷400        |  |          |  |

**Special functions**

Each of the previous 4 modes also offer the following options:

- **cascade distribution of the Bus line.**
  - ▶ **JP3** should only be left activated on the last switching device.
- **the self-powering function of the LS-LS input** which makes it possible to control the riser on the output of the LM-LM terminals without requiring a dedicated secondary external unit.
  - ▶ **JP1** should be set to **A** to activate the function.

## Programming table for dip-switches and JP2 setting

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

## Technical features

### MAIN FEATURES

|                                 |        |
|---------------------------------|--------|
| Product height (mm)             | 85     |
| Product width (mm)              | 60     |
| Product depth (mm)              | 35     |
| Operating temperature (°C)      | 5 - 40 |
| DIN rail mounted                | Yes    |
| DIN modules (no.)               | 4      |
| Maximum current absorption (mA) | 80     |

### COMPATIBILITY

|                                  |     |
|----------------------------------|-----|
| Simplebus Top audio/video system | Yes |
| Simplebus 1 audio system         | Yes |

### AUDIO/VIDEO FEATURES

|                    |     |
|--------------------|-----|
| Audio system       | Yes |
| Audio/video system | Yes |

## System performance and layouts

For further information of system performance and to view installation layouts, click on the system type that best meets your requirements:

- [SBTOP audio/video system](#) for the creation of audio-video systems for *residential complexes*.
- [SB1 audio system](#) for the creation of audio systems for *residential complexes*.





CERTIFIED MANAGEMENT SYSTEMS



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