

# NLE10CN

## Energy-optimized LBP/MBP Compressor R290

**220-240V 50Hz**

## General

|                       |                           |
|-----------------------|---------------------------|
| Code number           | 105H6175                  |
| Approvals             | EN 60335-2-34 w. Annex AA |
| Compressors on pallet | 80                        |

## Application

| Application                                    |    | LBP/MBP    |    |
|------------------------------------------------|----|------------|----|
| Frequency                                      | Hz | 50         | 60 |
| Evaporating temperature                        | °C | -35 to 10  | –  |
| Voltage range                                  | V  | 198 to 254 | –  |
| Max. condensing temperature continuous (short) | °C | 65 (65)    | –  |
| Max. winding temperature continuous (short)    | °C | 125 (135)  | –  |

### Cooling requirements

| Frequency   | Hz | 50             |                |     | 60  |     |     |
|-------------|----|----------------|----------------|-----|-----|-----|-----|
| Application |    | LBP            | MBP            | HBP | LBP | MBP | HBP |
| 32°C        |    | F <sub>2</sub> | F <sub>2</sub> | –   | –   | –   | –   |
| 38°C        |    | F <sub>2</sub> | F <sub>2</sub> | –   | –   | –   | –   |
| 43°C        |    | F <sub>2</sub> | F <sub>2</sub> | –   | –   | –   | –   |

Remarks on application:

## Motor

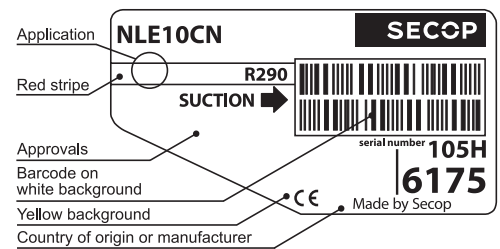
| Motor type                                |   | CSIR/RSIR/RSCR |      |
|-------------------------------------------|---|----------------|------|
| LRA (rated after 4 sec. UL984), HST   LST | A | 12.0           | 10.9 |
| Cut in Current, HST   LST                 | A | 12.0           | 15.8 |
| Resistance, main   start winding (25°C)   | Ω | 8.0            | 18.0 |

## Design

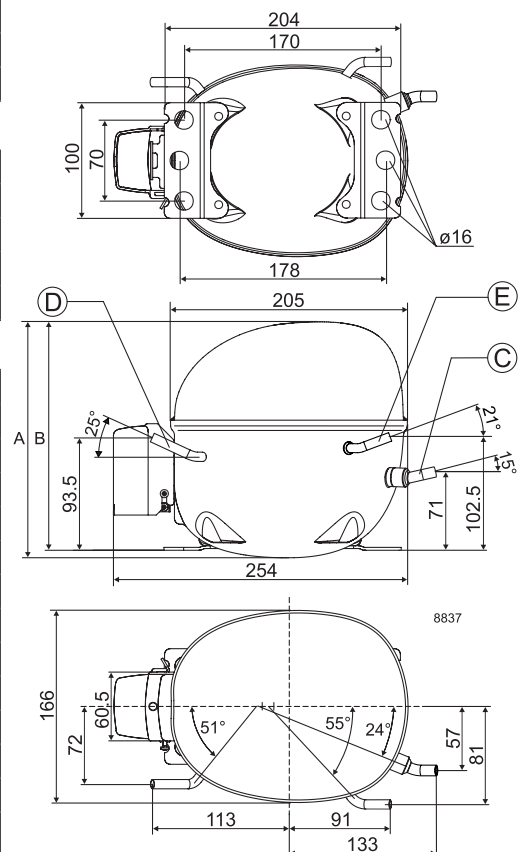
|                                     |                 |                   |
|-------------------------------------|-----------------|-------------------|
| Displacement                        | cm <sup>3</sup> | 10.09             |
| Oil quantity (type)                 | cm <sup>3</sup> | 300 (polyolester) |
| Maximum refrigerant charge          | g               | 150               |
| Free gas volume in compressor       | cm <sup>3</sup> | 2360              |
| Weight without electrical equipment | kg              | 12.1              |

## Dimensions

|                      |                          |                      |           |
|----------------------|--------------------------|----------------------|-----------|
| Height               | mm                       | A                    | 203       |
|                      |                          | B                    | 197       |
|                      |                          | B1                   | –         |
|                      |                          | B2                   | –         |
| Suction connector    | location/I.D. mm   angle | C                    | 8.2   15° |
|                      | material   comment       | Copper   Rubber plug |           |
| Process connector    | location/I.D. mm   angle | D                    | 6.2   25° |
|                      | material   comment       | Copper   Rubber plug |           |
| Discharge connector  | location/I.D. mm   angle | E                    | 6.2   21° |
|                      | material   comment       | Copper   Rubber plug |           |
| Oil cooler connector | location/I.D. mm   angle | F                    | –         |
|                      | material   comment       | –                    |           |
| Connector tolerance  | I.D. mm                  | ±0.09                |           |
| Remarks:             |                          |                      |           |



S = Static cooling normally sufficient  
O = Oil cooling  
F<sub>1</sub> = Fan cooling 1.5 m/s  
(compressor compartment temperature  
equal to ambient temperature)  
F<sub>2</sub> = Fan cooling 3.0 m/s necessary  
SG = Suction gas cooling normally sufficient  
— = not applicable in this area



**EN 12900 LBP**220V, 50Hz, fan cooling F<sub>2</sub>

|                    |     |     |      |      |      |       |      |      |      |      |      |      |      |      |      |    |    |
|--------------------|-----|-----|------|------|------|-------|------|------|------|------|------|------|------|------|------|----|----|
| Evap. temp. in °C  | -45 | -40 | -35  | -30  | -25  | -23.3 | -20  | -15  | -10  | -6.7 | -5   | 0    | 5    | 7.2  | 10   | 15 | 20 |
| Capacity in W      |     |     | 289  | 364  | 455  | 491   | 565  | 695  | 845  | 956  | 1017 | 1212 | 1431 | 1535 | 1675 |    |    |
| Power cons. in W   |     |     | 242  | 275  | 308  | 320   | 341  | 372  | 400  | 416  | 424  | 444  | 459  | 463  | 467  |    |    |
| Current cons. in A |     |     | 1.87 | 1.95 | 2.04 | 2.08  | 2.14 | 2.24 | 2.33 | 2.38 | 2.41 | 2.47 | 2.52 | 2.53 | 2.54 |    |    |
| COP in W/W         |     |     | 1.20 | 1.32 | 1.48 | 1.54  | 1.66 | 1.87 | 2.11 | 2.30 | 2.40 | 2.73 | 3.12 | 3.31 | 3.59 |    |    |

**EN 12900 MBP**220V, 50Hz, fan cooling F<sub>2</sub>

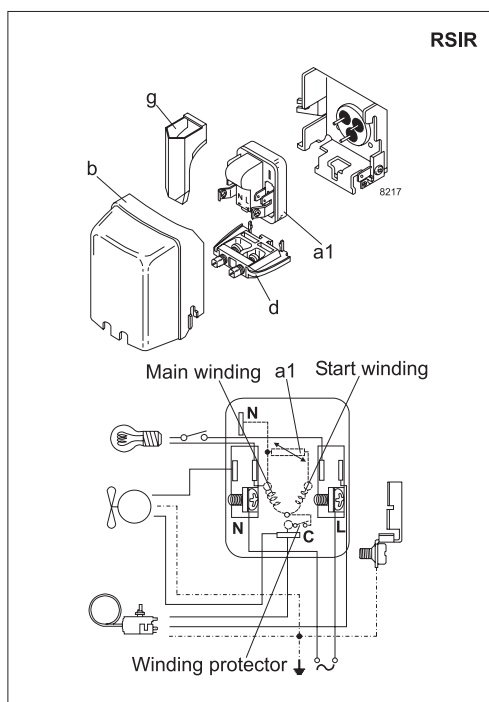
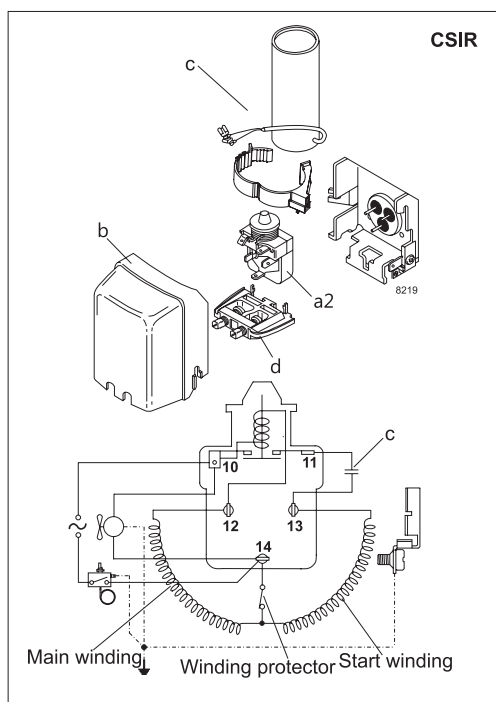
|                    |     |     |      |      |      |       |      |      |      |      |      |      |      |      |      |    |    |
|--------------------|-----|-----|------|------|------|-------|------|------|------|------|------|------|------|------|------|----|----|
| Evap. temp. in °C  | -45 | -40 | -35  | -30  | -25  | -23.3 | -20  | -15  | -10  | -6.7 | -5   | 0    | 5    | 7.2  | 10   | 15 | 20 |
| Capacity in W      |     |     | 268  | 339  | 427  | 461   | 532  | 654  | 796  | 900  | 957  | 1140 | 1345 | 1443 | 1574 |    |    |
| Power cons. in W   |     |     | 246  | 281  | 316  | 328   | 351  | 385  | 418  | 438  | 448  | 474  | 495  | 503  | 511  |    |    |
| Current cons. in A |     |     | 1.89 | 1.97 | 2.06 | 2.10  | 2.17 | 2.28 | 2.39 | 2.45 | 2.49 | 2.58 | 2.65 | 2.68 | 2.70 |    |    |
| COP in W/W         |     |     | 1.09 | 1.21 | 1.35 | 1.41  | 1.51 | 1.70 | 1.90 | 2.06 | 2.14 | 2.41 | 2.72 | 2.87 | 3.08 |    |    |

**ASHRAE LBP**220V, 50Hz, fan cooling F<sub>2</sub>

|                    |     |     |      |      |      |       |      |      |      |      |      |      |      |      |      |    |    |
|--------------------|-----|-----|------|------|------|-------|------|------|------|------|------|------|------|------|------|----|----|
| Evap. temp. in °C  | -45 | -40 | -35  | -30  | -25  | -23.3 | -20  | -15  | -10  | -6.7 | -5   | 0    | 5    | 7.2  | 10   | 15 | 20 |
| Capacity in W      |     |     | 267  | 350  | 449  | 486   | 565  | 702  | 859  | 974  | 1037 | 1240 | 1467 | 1575 | 1721 |    |    |
| Power cons. in W   |     |     | 244  | 280  | 318  | 331   | 357  | 397  | 437  | 462  | 475  | 510  | 543  | 556  | 571  |    |    |
| Current cons. in A |     |     | 1.91 | 2.00 | 2.11 | 2.15  | 2.24 | 2.37 | 2.52 | 2.62 | 2.67 | 2.81 | 2.94 | 3.00 | 3.06 |    |    |
| COP in W/W         |     |     | 1.09 | 1.25 | 1.41 | 1.47  | 1.58 | 1.77 | 1.97 | 2.11 | 2.19 | 2.43 | 2.70 | 2.83 | 3.01 |    |    |

**ASHRAE MBP/HBP**220V, 50Hz, fan cooling F<sub>2</sub>

|                    |     |     |      |      |      |       |      |      |      |      |      |      |      |      |      |    |    |
|--------------------|-----|-----|------|------|------|-------|------|------|------|------|------|------|------|------|------|----|----|
| Evap. temp. in °C  | -45 | -40 | -35  | -30  | -25  | -23.3 | -20  | -15  | -10  | -6.7 | -5   | 0    | 5    | 7.2  | 10   | 15 | 20 |
| Capacity in W      |     |     | 239  | 312  | 401  | 434   | 505  | 626  | 766  | 868  | 924  | 1104 | 1304 | 1400 | 1528 |    |    |
| Power cons. in W   |     |     | 242  | 277  | 315  | 328   | 354  | 393  | 432  | 457  | 469  | 504  | 536  | 549  | 564  |    |    |
| Current cons. in A |     |     | 1.91 | 2.00 | 2.11 | 2.15  | 2.24 | 2.37 | 2.52 | 2.62 | 2.67 | 2.81 | 2.94 | 3.00 | 3.06 |    |    |
| COP in W/W         |     |     | 0.99 | 1.13 | 1.27 | 1.32  | 1.43 | 1.59 | 1.77 | 1.90 | 1.97 | 2.19 | 2.43 | 2.55 | 2.71 |    |    |



| Accessories for           | NLE10CN                 | Figure | Code number |
|---------------------------|-------------------------|--------|-------------|
| ePTC starting device      | 6.3 mm spade connectors | a1     | —           |
|                           | 4.8 mm spade connectors |        | 103N0050    |
| Starting relay            | 6.3 mm spade connectors | a2     | 117U7002    |
| Start. capacitor 80 µF    | 6.3 mm spade connectors | c      | 117U5015    |
| Cover                     |                         | b      | 103N2010    |
| Cord relief               |                         | d      | 103N1010    |
| Protection screen for PTC |                         | g      | —           |

| Test conditions         | EN 12900      |      | ASHRAE |        |
|-------------------------|---------------|------|--------|--------|
|                         | LBP           | MBP  | LBP    | MBP    |
| Condensing temperature  | 40°C          | 45°C | 54.4°C | 54.4°C |
| Ambient temperature     | 32°C          | 32°C | 32.2°C | 35°C   |
| Suction gas temperature | 20°C          | 20°C | 32.2°C | 35°C   |
| Liquid temperature      | no subcooling |      | 32.2°C | 46.1°C |

| Mounting accessories     | Code number |          |
|--------------------------|-------------|----------|
| Bolt joint for one comp. | Ø: 16 mm    | 118-1917 |
| Bolt joint in quantities | Ø: 16 mm    | 118-1918 |
| Snap-on in quantities    | Ø: 16 mm    | 118-1919 |

**EN 12900 LBP**220V, 50Hz, RC 4 µF, ePTC consumption incl., fan cooling F<sub>2</sub>

|                    |     |     |      |      |      |       |      |      |      |      |      |      |      |      |      |    |    |
|--------------------|-----|-----|------|------|------|-------|------|------|------|------|------|------|------|------|------|----|----|
| Evap. temp. in °C  | -45 | -40 | -35  | -30  | -25  | -23.3 | -20  | -15  | -10  | -6.7 | -5   | 0    | 5    | 7.2  | 10   | 15 | 20 |
| Capacity in W      |     |     | 292  | 367  | 460  | 496   | 571  | 702  | 854  | 966  | 1028 | 1224 | 1445 | 1550 | 1691 |    |    |
| Power cons. in W   |     |     | 237  | 267  | 298  | 308   | 328  | 356  | 383  | 398  | 406  | 425  | 439  | 443  | 447  |    |    |
| Current cons. in A |     |     | 1.43 | 1.58 | 1.71 | 1.75  | 1.83 | 1.94 | 2.03 | 2.08 | 2.10 | 2.16 | 2.20 | 2.21 | 2.22 |    |    |
| COP in W/W         |     |     | 1.23 | 1.37 | 1.54 | 1.61  | 1.74 | 1.97 | 2.23 | 2.43 | 2.53 | 2.88 | 3.29 | 3.50 | 3.78 |    |    |

**EN 12900 MBP**220V, 50Hz, RC 4 µF, ePTC consumption incl., fan cooling F<sub>2</sub>

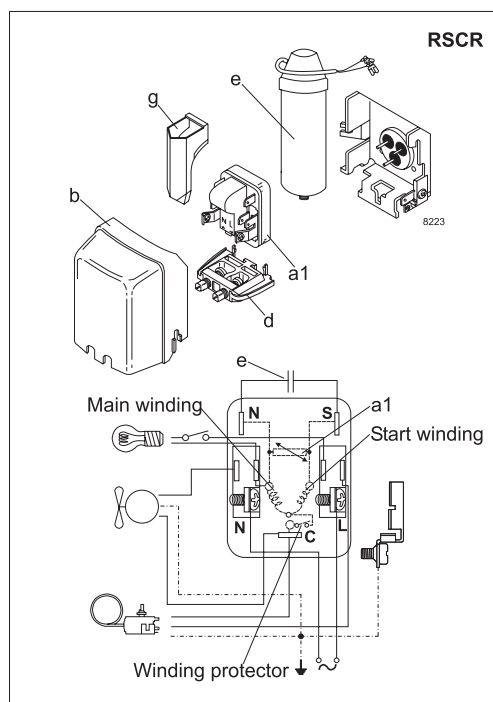
|                    |     |     |      |      |      |       |      |      |      |      |      |      |      |      |      |    |    |
|--------------------|-----|-----|------|------|------|-------|------|------|------|------|------|------|------|------|------|----|----|
| Evap. temp. in °C  | -45 | -40 | -35  | -30  | -25  | -23.3 | -20  | -15  | -10  | -6.7 | -5   | 0    | 5    | 7.2  | 10   | 15 | 20 |
| Capacity in W      |     |     | 270  | 343  | 431  | 465   | 537  | 661  | 804  | 909  | 967  | 1152 | 1359 | 1458 | 1590 |    |    |
| Power cons. in W   |     |     | 242  | 274  | 307  | 318   | 340  | 372  | 403  | 422  | 431  | 456  | 477  | 484  | 492  |    |    |
| Current cons. in A |     |     | 1.46 | 1.60 | 1.72 | 1.76  | 1.83 | 1.94 | 2.03 | 2.09 | 2.12 | 2.19 | 2.24 | 2.27 | 2.29 |    |    |
| COP in W/W         |     |     | 1.12 | 1.25 | 1.41 | 1.46  | 1.58 | 1.78 | 2.00 | 2.16 | 2.24 | 2.53 | 2.85 | 3.01 | 3.23 |    |    |

**ASHRAE LBP**220V, 50Hz, RC 4 µF, ePTC consumption incl., fan cooling F<sub>2</sub>

|                    |     |     |      |      |      |       |      |      |      |      |      |      |      |      |      |    |    |
|--------------------|-----|-----|------|------|------|-------|------|------|------|------|------|------|------|------|------|----|----|
| Evap. temp. in °C  | -45 | -40 | -35  | -30  | -25  | -23.3 | -20  | -15  | -10  | -6.7 | -5   | 0    | 5    | 7.2  | 10   | 15 | 20 |
| Capacity in W      |     |     | 270  | 353  | 453  | 491   | 571  | 709  | 867  | 984  | 1048 | 1252 | 1482 | 1591 | 1738 |    |    |
| Power cons. in W   |     |     | 236  | 270  | 307  | 319   | 344  | 382  | 419  | 443  | 455  | 488  | 518  | 530  | 544  |    |    |
| Current cons. in A |     |     | 1.59 | 1.71 | 1.84 | 1.88  | 1.96 | 2.09 | 2.21 | 2.29 | 2.33 | 2.45 | 2.57 | 2.62 | 2.68 |    |    |
| COP in W/W         |     |     | 1.14 | 1.31 | 1.48 | 1.54  | 1.66 | 1.86 | 2.07 | 2.22 | 2.30 | 2.57 | 2.86 | 3.00 | 3.20 |    |    |

**ASHRAE MBP/HBP**220V, 50Hz, RC 4 µF, ePTC consumption incl., fan cooling F<sub>2</sub>

|                    |     |     |      |      |      |       |      |      |      |      |      |      |      |      |      |    |    |
|--------------------|-----|-----|------|------|------|-------|------|------|------|------|------|------|------|------|------|----|----|
| Evap. temp. in °C  | -45 | -40 | -35  | -30  | -25  | -23.3 | -20  | -15  | -10  | -6.7 | -5   | 0    | 5    | 7.2  | 10   | 15 | 20 |
| Capacity in W      |     |     | 241  | 316  | 405  | 439   | 510  | 633  | 773  | 877  | 934  | 1115 | 1318 | 1414 | 1543 |    |    |
| Power cons. in W   |     |     | 234  | 268  | 304  | 316   | 341  | 378  | 415  | 438  | 450  | 482  | 512  | 523  | 537  |    |    |
| Current cons. in A |     |     | 1.59 | 1.71 | 1.84 | 1.88  | 1.96 | 2.09 | 2.21 | 2.29 | 2.33 | 2.45 | 2.57 | 2.62 | 2.68 |    |    |
| COP in W/W         |     |     | 1.03 | 1.18 | 1.33 | 1.39  | 1.50 | 1.67 | 1.87 | 2.00 | 2.08 | 2.31 | 2.57 | 2.70 | 2.88 |    |    |



| Accessories for               | NLE10CN                 | Figure | Code number |
|-------------------------------|-------------------------|--------|-------------|
| ePTC starting device          | 6.3 mm spade connectors | a1     | —           |
|                               | 4.8 mm spade connectors |        | 103N0050    |
| Run capacitor 4 µF (optional) | 4.8 mm spade connectors | e      | 117-7119    |
| Cover                         |                         | b      | 103N2010    |
| Cord relief                   |                         | d      | 103N1010    |
| Protection screen for PTC     |                         | g      | —           |

| Test conditions         | EN 12900      |      | ASHRAE |        |
|-------------------------|---------------|------|--------|--------|
|                         | LBP           | MBP  | LBP    | MBP    |
| Condensing temperature  | 40°C          | 45°C | 54.4°C | 54.4°C |
| Ambient temperature     | 32°C          | 32°C | 32.2°C | 35°C   |
| Suction gas temperature | 20°C          | 20°C | 32.2°C | 35°C   |
| Liquid temperature      | no subcooling |      | 32.2°C | 46.1°C |

| Mounting accessories     | Code number |          |
|--------------------------|-------------|----------|
| Bolt joint for one comp. | Ø: 16 mm    | 118-1917 |
| Bolt joint in quantities | Ø: 16 mm    | 118-1918 |
| Snap-on in quantities    | Ø: 16 mm    | 118-1919 |

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