



SECOP 105N4120 Basic Controllers for NLV-CN Compressors Instruction Manual

[Home](#) » [SECOP](#) » SECOP 105N4120 Basic Controllers for NLV-CN Compressors Instruction Manual 



Operating Instructions
BASIC CONTROLLERS FOR
NLV-CN COMPRESSORS
105N4120 Basic · 220–240 V | 50/60 Hz



Basic Controllers for NLV-CN Compressors

Contents

- 1 INSTALLATION
- 2 SPEED CONTROL
- 3 TECHNICAL DATA
- 4 DIMENSIONS
- 5 ORDERING
- 6 Documents / Resources
 - 6.1 References

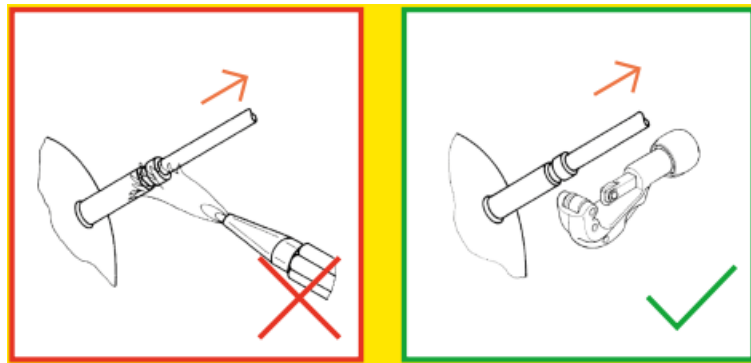
INSTALLATION

WARNING!



R290

To remove a compressor from a system the tubes must be cut.
Never use a torch to remove brazed tubes.

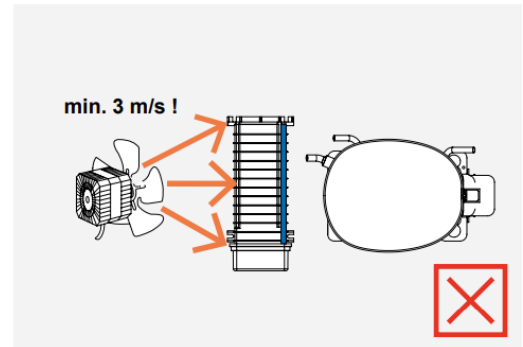
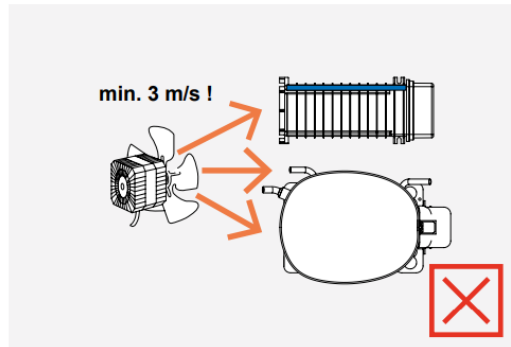
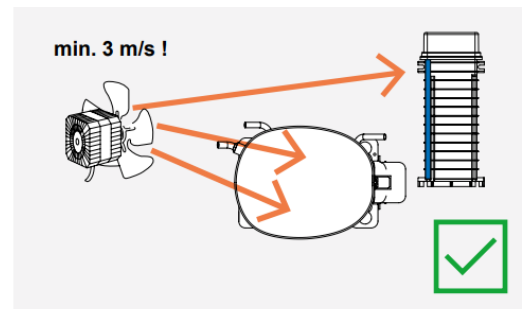
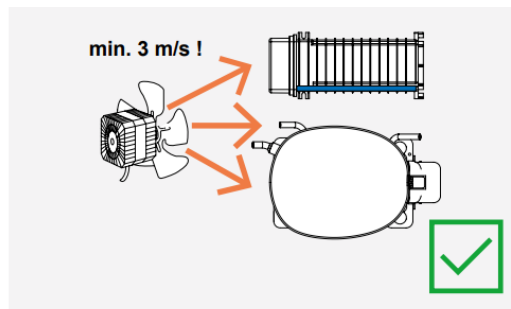
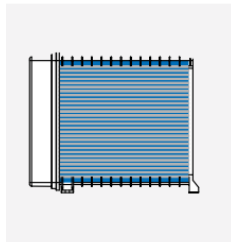


Brazing on Suction Connectors (Direct Intake)



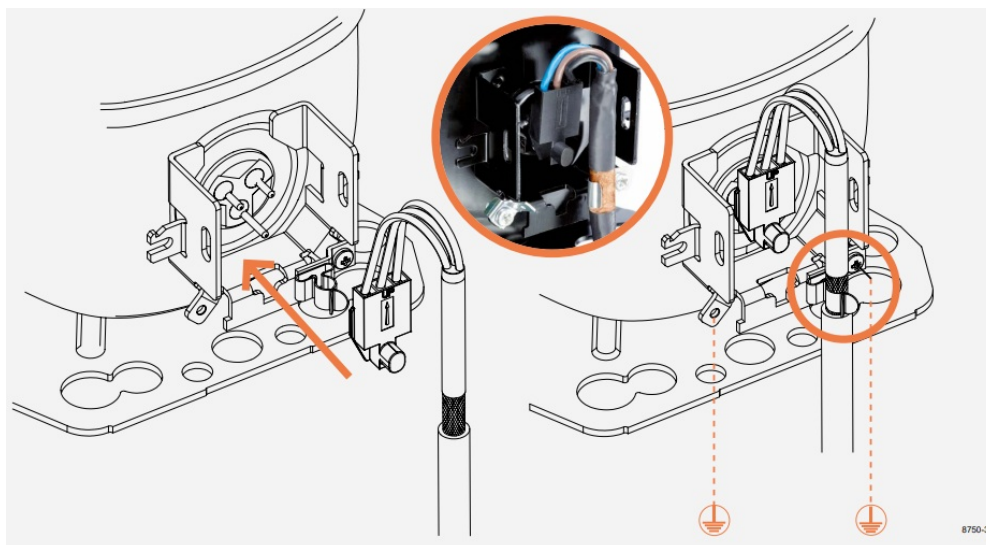
Refer to Product Bulletin: Brazing on Suction Connectors (Compressors with Direct Suction Intake)

1.1 Airflow



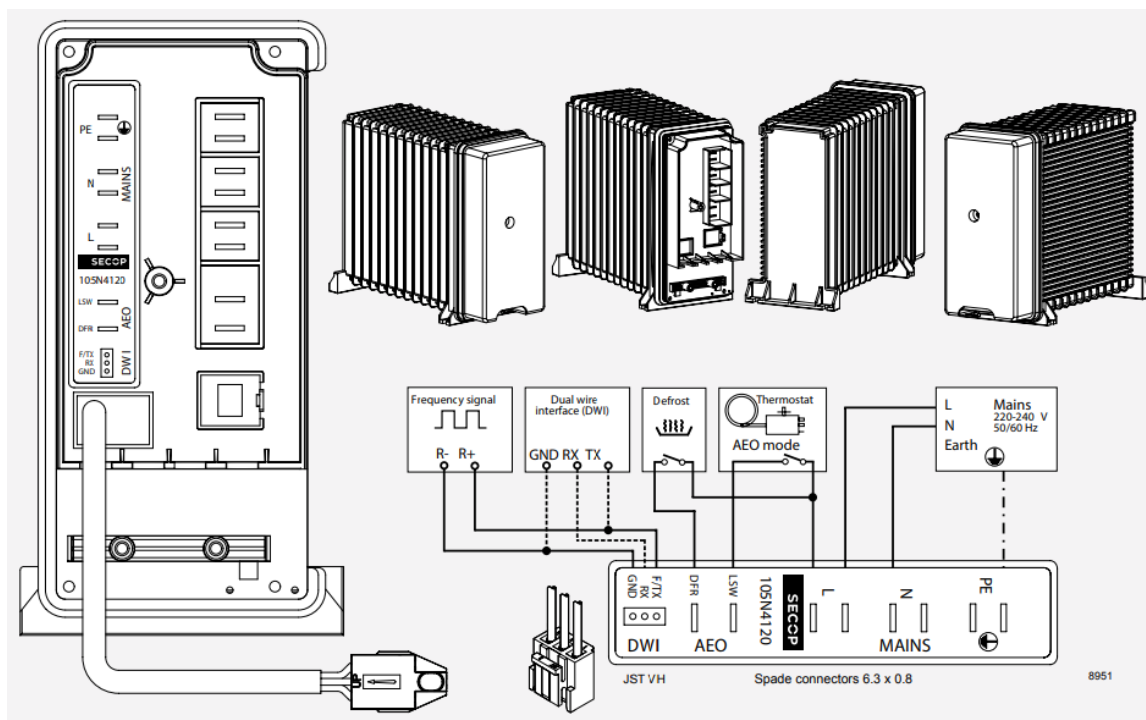
Ensure proper airflow of 3 m/s at both compressor and electronic units.
The airflow for the electronics must be directed to the heat sink.

1.2 Earthing the Compressor and Controller



- > For optimum EMC performance, the copper shield of the controller cable must be fastened properly in the clip at the compressor.
- > Compressor and controller must be connected to PE (Protective Earth) to avoid risk of electrical hazard.
- > All protective earth lines, PE, in the application must be collected to one star point. This prevents loop currents which could cause problems concerning the electronic components, communication lines, and sensors. The star-point is normally a screwed terminal on the chassis.

1.3 Wiring Diagram



- > Installation must only be done by trained personal.
 - > Do not remove the cover of the controller when the unit is powered on.
 - > Disconnect from power and wait 30 seconds before accessing terminals.
 - > The maximum cable length should not exceed 3 meters for signal connections.
- A cable length of more than 3 m could alter the EMI performance.
- > Signal lines must be separated from power lines.

1.4 Connections

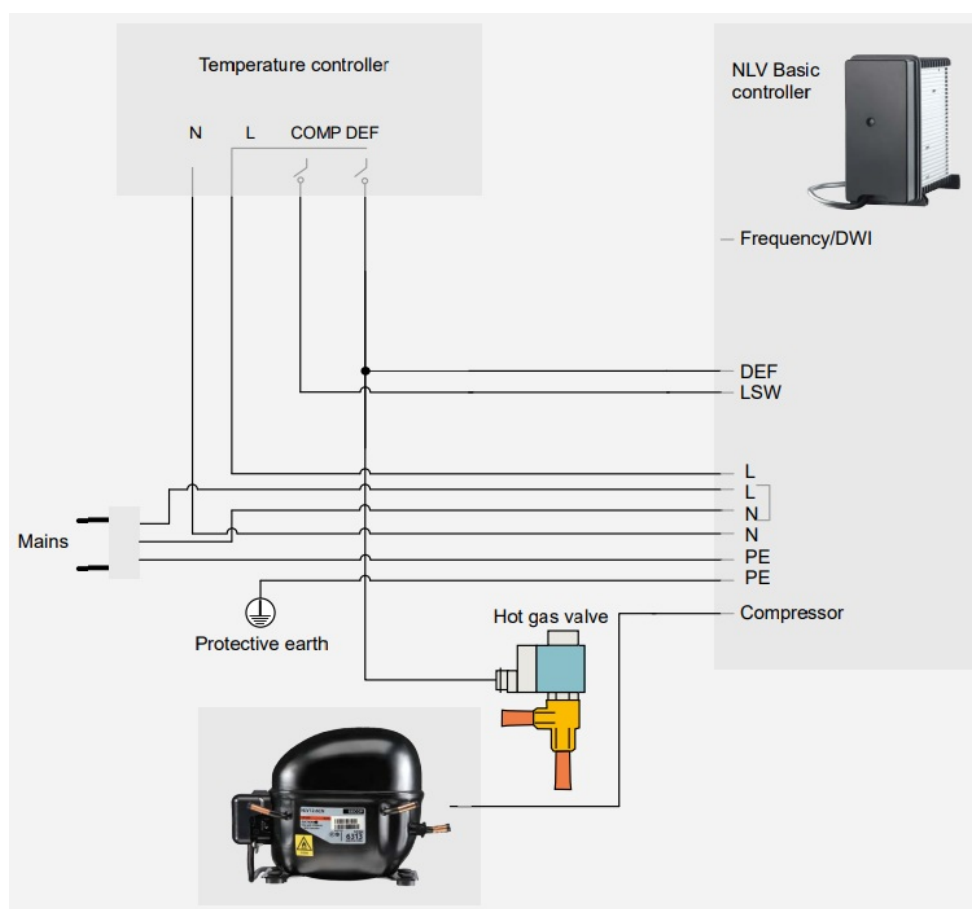


1. 2x Protective Earth
2. 2x Neutral
3. 2x Line
4. Thermostat/AEO
5. Defrost

6. Frequency and DWI

No.	Description	Type	Note
1	Protective Earth	FASTON 6.3 mm × 0.8 mm	Mandatory, must be connected
2	Neutral	FASTON 6.3 mm × 0.8 mm	Mandatory, must be connected
3	Line	FASTON 6.3 mm × 0.8 mm	Mandatory, must be connected
4	Thermostat	FASTON 6.3 mm × 0.8 mm	For AEO only
5	Defrost	FASTON 6.3 mm × 0.8 mm	For AEO and defrost only
6	Frequency/DWI	JST VH	For frequency or DWI only

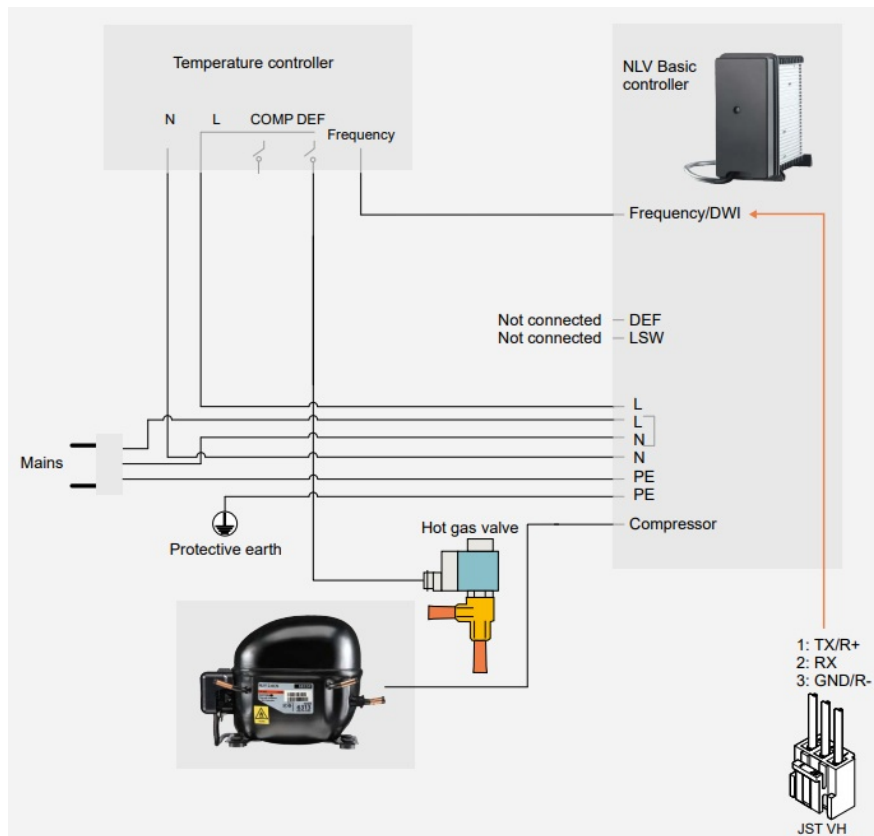
1.5 Wiring for Thermostatic Operation



For optimal hot-gas defrost performance, the relay output of the controller should be connected to the DEF input of the controller.

This ensures that the compressor operates at full speed when the hotgas valve is activated.

1.6 Wiring for Frequency Operation/DWI Communication



SPEED CONTROL

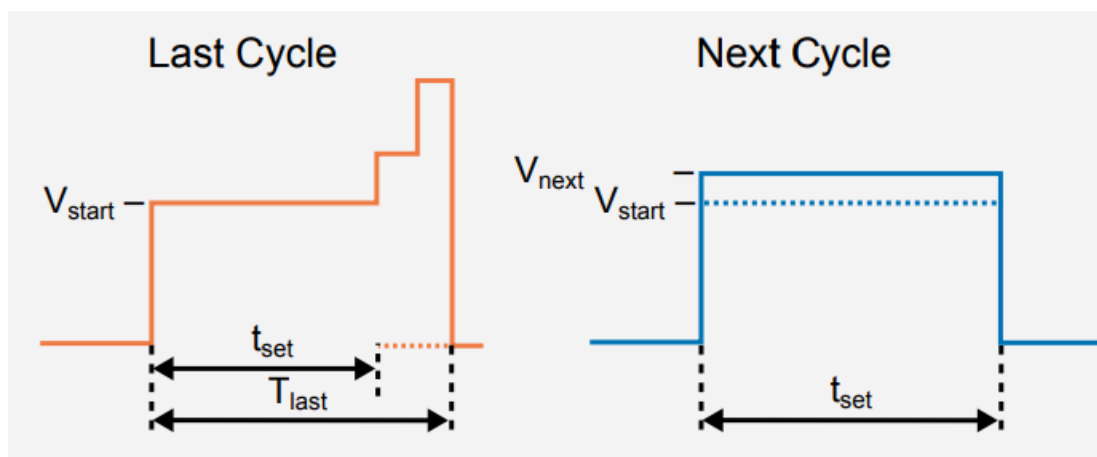
The Secop Basic controller is equipped with three different inputs for speed control to ensure easy integration. Almost any temperature controller can be used to control the speed without needing to change the setup. The Basic controller has automatic input detection and will automatically select the input which is active.

1. Frequency signal.
2. Thermostatic operation with AEO, Adaptive Energy Optimization.
3. DWI, Dual Wire Interface with separated RX and TX lines.

- > If more signals are connected, the input with highest priority (1–3) will be used.
- > DWI input has the lowest priority and can be used for monitoring in combination with the other inputs.
- > If DWI sends an active start command, the DWI input will change priority to 1 and overrule all other input signals.



2.1 Thermostatic Operation with AEO



% Runtime	% Speed
100	105
110	110
120	120
140	130
160	140
190	180
220	225

AEO is the only control mode where there is no direct relation between speed and input signal. The speed is automatically calculated based on the runtime (time between cutin and cut-out). The AEO can be interfaced by a normal thermostat or relay.

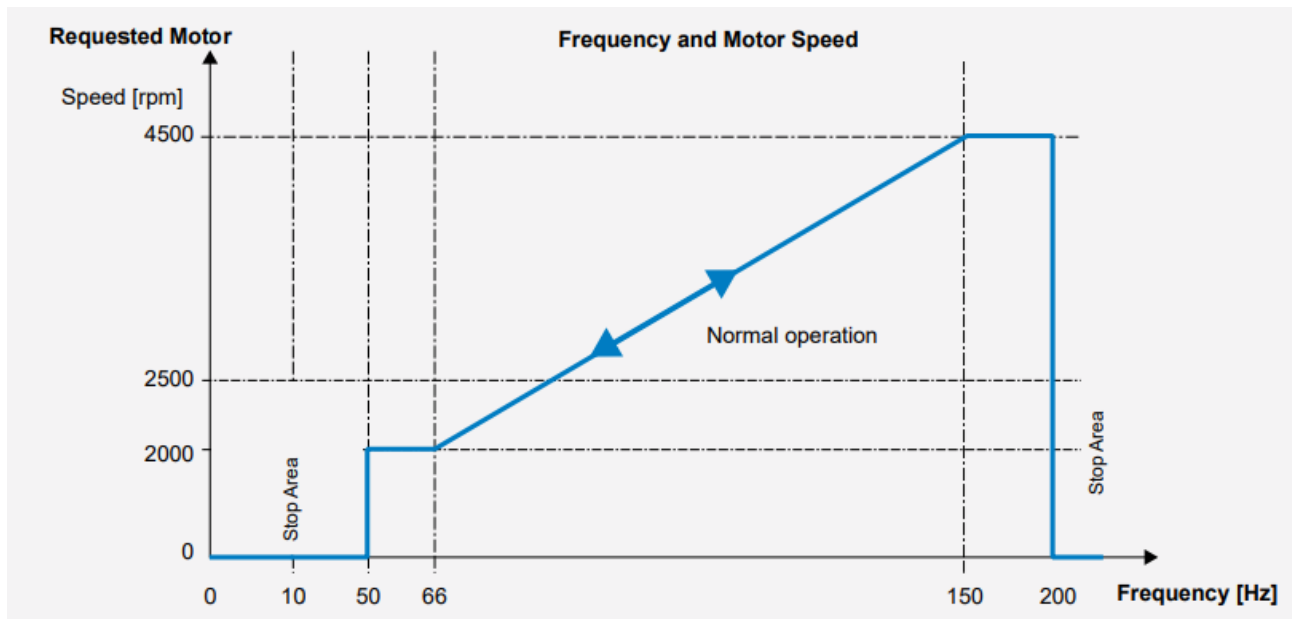
Advantages of the AEO:

- > Easy to interface.
- > Mechanical thermostat.
- > Electronic control with relay output.
- > Perfect for applications with stable conditions, such as freezers, catering equipment.

The AEO operates with a target runtime and will automatically adapt the speed until the target runtime is met.

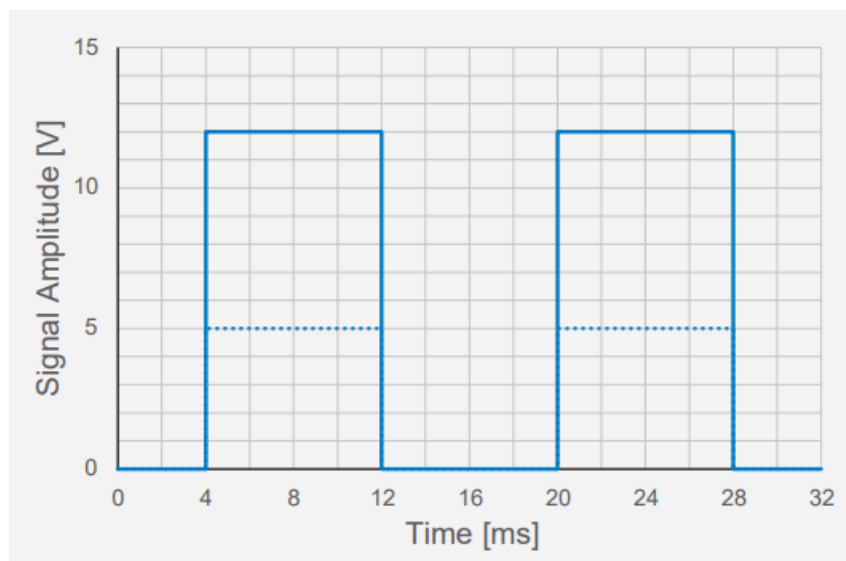
- > If the compressor runtime is shorter than the target time, the speed in the next cycle will be reduced.
- > If the runtime is longer than the target time, the speed in the current cycle will be increased until the cut-out is reached. The next cycle is calculated as the average speed for the last cycle.

2.2 Frequency Speed Control



The speed can be controlled by applying a low voltage frequency signal to the frequency input

- > The speed is changed linearly between 66 Hz and 150 Hz.
- > The frequency of 66 Hz corresponds to 2000 rpm, 150 Hz to 4500 rpm (30 rpm/1 Hz by default).
- > If the frequency is between 10-50 Hz, the compressor stops.
- > The frequency signal should have a voltage of 5–12 V and a duty cycle of 50%.



2.3 DWI Serial Communication

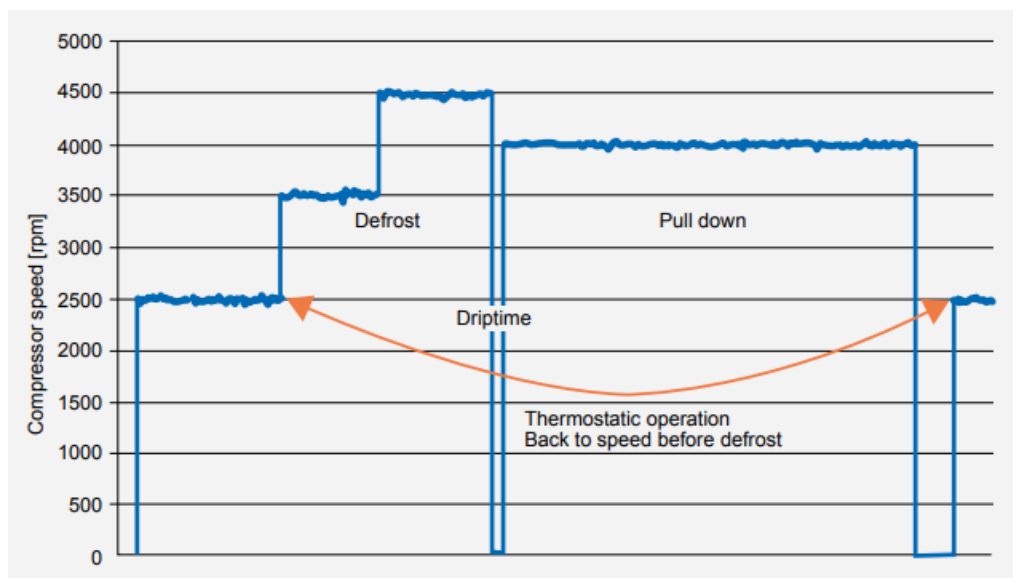
Communication Specification	
Baud Rate:	600 Baud
Start Bits:	1
Data Bits:	8
Stop Bits:	1
Parity:	No
Frame Size:	5 Bytes
Appliance Controller:	Master
Compressor Controller:	Client
Start Bit:	1 -> 0 (logic level)
Data Bits:	Inverted logic (0V -> "1")
Stop Bit:	0 -> 1 (logic level)
Control Mode:	Half duplex

The DWI, Dual Wire interface, is a bidirectional communication protocol that allows the temperature controller to communicate with the compressor controller.

In addition to speed, the temperature controller can get different information from the controller, such as power-consumption, actual speed, electronic temperature, and fault status.

The communication interface is shared with the frequency interface. A full description of the interface and a list of supported commands may be requested from Secop.

2.4 Defrost Control with AEO



When variable-speed compressors are used in self-adapting capacity modes, defrosting may not work properly since the compressor speed cannot be controlled during defrost: The compressor lacks capacity for hot gas and the following pull-down.

To improve defrost when AEO is used, the Basic controller has an extra input that can be connected to the defrost relay output of the temperature controller.

> Hot-gas defrosting: When the defrost and AEO input are activated simultaneously, the Basic controller switches to a defined speed (defrost low speed). After a defined defrost low speed time, the compressor will increase to

- defrost high speed until the defrost is completed.
- > The two-speed defrost is a new feature of all next generation controllers to avoid liquid refrigerant inside the compressor.
 - > Electrical defrosting: When only the defrost input is activated, the compressor will remain stopped, but the information is used to trigger pull-down after defrosting.
 - > After defrosting, the Basic controller will run the first cycle at high speed to ensure that the heat is removed as fast as possible.
 - > After the pull-down it reverts to the speed it had before defrost.



TECHNICAL DATA

3.1 Controller Data

	Electronic Unit	105N4120
Power supply	Nominal voltage	220–240 V AC
	Minimum operating voltage	187 V AC
	Minimum starting voltage	198 V AC
	Maximum voltage	264 V AC
	Frequency	50–60 Hz
	Max power input	1000 W
	Power Factor Corrector	No
	Motor cable length	680±20 mm / 26.0-27.6 in.

Environment	IP class	IP31
	Humidity	30–90% rH
	Maximum operating temperature	50°C / 120°F
	Minimum operating temperature	0°C / 32°F
	Storage temperature	-30 to 70°C / -22°F to 158°F

Approvals/ Safety	Compressor protection	Software protection + internal in compressor
	RoHs Conformity	IEC 62321

Speed-Control	Frequency input	5–12 V, max. 8 mA, 0–200 Hz
	AEO Thermostat input (Lsw)	198 V–264 V AC, non-isolated
	AEO Defrost input (Def)	198 V–264 V AC, non-isolated
	RX/TX interface (DWI)	5–12 V, max. 8 mA, 600 baud

3.2 CompressorData

	NLV8.0CN / NLV10CN / NLV12.6CN		
Compressor	Application		LBP/MBP
	Evaporating temperature	°C (°F)	-40 to 0 (-40 to 32)
	Voltage range/frequency	V/Hz	198–270/50/60
	Speed range	rpm	2000–4500

3.3 Capacity and Performance Data NLV12.6CN

LBP: ASHRA E	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	428. 3	488. 9	549. 5	603. 6	657. 6	751. 0	844. 3	937. 7	Evaporation pressure	-23.3° C	-10°F
Capacity [BTU /h]	146 3	167 0	187 7	206 1	224 6	256 5	288 4	3202	Condensing pressure	54.4° C	130°F
Power cons. [W]	237. 4	265. 7	294. 0	322. 2	350. 4	416. 0	481. 7	547. 3	Liquid temperature	32.2° C	90°F
Current cons. [A]	1.59	1.77	1.95	2.13	2.32	2.70	3.09	3.47	Return gas temp.	32.2° C	90°F
COP [W/W]	1.80	1.84	1.87	1.87	1.88	1.81	1.75	1.71			
EER [BTU/Wh]	6.16	6.28	6.38	6.40	6.41	6.16	5.99	5.85			

LBP: CECOM AF	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	320. 4	366. 0	411. 7	452. 9	494. 1	563. 3	632. 4	701. 6	Evaporation pressure	-25°C	-13°F
Capacity [BTU /h]	109 4	125 0	140 6	154 7	168 8	192 4	216 0	2396	Condensing pressure	55°C	131°F
Power cons. [W]	227. 7	254. 3	280. 9	308. 0	335. 2	398. 3	461. 5	524. 7	Liquid temperature	55°C	131°F
Current cons. [A]	1.53	1.70	1.86	2.04	2.22	2.59	2.96	3.34	Return gas temp.	32°C	90°F
COP [W/W]	1.41	1.44	1.47	1.47	1.47	1.41	1.37	1.34			
EER [BTU/Wh]	4.81	4.92	5.01	5.02	5.04	4.83	4.68	4.57			

c	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	243. 4	273. 1	302. 8	335. 4	367. 9	424. 0	480. 1	536. 2	Evaporation pressure	-35°C	-31°F
Capacity [BTU /h]	831	933	103 4	114 5	125 7	144 8	164 0	1831	Condensing pressure	40°C	104°F
Power cons. [W]	158. 6	173. 9	189. 2	211. 9	234. 7	277. 3	319. 8	362. 3	Liquid temperature	40°C	104°F
Current cons. [A]	1.09	1.18	1.28	1.42	1.57	1.84	2.11	2.38	Return gas temp.	20°C	68°F
COP [W/W]	1.54	1.57	1.60	1.58	1.57	1.53	1.50	1.48			
EER [BTU/Wh]	5.24	5.36	5.47	5.40	5.35	5.22	5.13	5.05			

MBP: ASHRAE	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	764. 3	864. 3	964. 2	105 9	115 4	132 7	150 1	1674	Evaporation pressure	-6.7°C	20°F
Capacity [BTU /h]	261 0	295 2	329 3	361 7	394 2	453 3	512 5	5717	Condensing pressure	54.4° C	130°F
Power cons. [W]	336. 5	379. 7	423. 0	462. 2	501. 4	601. 9	702. 5	803. 1	Liquid temperature	46.1° C	115°F
Current cons. [A]	2.23	2.51	2.79	3.04	3.29	3.85	4.40	4.95	Return gas temp.	35°C	95°F
COP [W/W]	2.27	2.28	2.28	2.29	2.30	2.21	2.14	2.08			
EER [BTU/Wh]	7.76	7.77	7.79	7.83	7.86	7.53	7.30	7.12			

MBP: CECOM AF	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	607. 1	688. 6	770. 1	844. 3	918. 6	105 6	119 3	1330	Evaporation pressure	-10°C	14°F
Capacity [BTU /h]	207 3	235 2	263 0	288 4	313 7	360 5	407 3	4540	Condensing pressure	55°C	131°F
Power cons. [W]	317. 7	359. 1	400. 4	436. 6	472. 9	566. 4	659. 9	753. 4	Liquid temperature	55°C	131°F
Current cons. [A]	2.11	2.38	2.64	2.88	3.11	3.63	4.15	4.67	Return gas temp.	32°C	90°F
COP [W/W]	1.91	1.92	1.92	1.93	1.94	1.86	1.81	1.77			
EER [BTU/Wh]	6.53	6.55	6.57	6.60	6.63	6.36	6.17	6.03			

MBP: EN1290 0	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	683. 4	765. 9	848. 4	927. 6	100 7	117 0	133 4	1497	Evaporation pressure	-10°C	14°F
Capacity [BTU /h]	233 4	261 6	289 7	316 8	343 8	399 7	455 5	5113	Condensing pressure	45°C	113°F
Power cons. [W]	291. 1	326. 2	361. 2	395. 5	429. 8	514. 5	599. 1	683. 8	Liquid temperature	45°C	113°F
Current cons. [A]	1.94	2.17	2.40	2.61	2.83	3.31	3.79	4.28	Return gas temp.	20°C	90°F
COP [W/W]	2.35	2.35	2.35	2.35	2.34	2.28	2.23	2.19			
EER [BTU/Wh]	8.02	8.02	8.02	8.01	8.00	7.77	7.60	7.48			

3.4 Capacity and Performance Data NLV10CN

LBP: ASHRA E	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	2000	2250	2500	2750	3000	3500	4000	4500	Test conditions		
Capacity [W]	340.3	388.2	436.1	479.0	521.9	597.7	673.5	749.3	Evaporation pressure	-23.3°C	-10°F
Capacity [BTU/h]	1162	1326	1489	1636	1782	2041	2300	2559	Condensing pressure	54.4°C	130°F
Power cons. [W]	186.1	208.7	231.4	253.5	275.7	322.9	370.1	417.3	Liquid temperature	32.2°C	90°F
Current cons. [A]	1.26	1.41	1.55	1.69	1.83	2.13	2.42	2.71	Return gas temp.	32.2°C	90°F
COP [W/W]	1.83	1.86	1.89	1.89	1.89	1.85	1.82	1.80			
EER [BTU/Wh]	6.25	6.35	6.44	6.45	6.46	6.32	6.22	6.13			

LBP: CECOM AF	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	2000	2250	2500	2750	3000	3500	4000	4500	Test conditions		
Capacity [W]	254.6	290.7	326.8	359.5	392.2	448.3	504.4	560.5	Evaporation pressure	-25°C	-13°F
Capacity [BTU/h]	869	993	1116	1228	1339	1531	1723	1914	Condensing pressure	55°C	131°F
Power cons. [W]	178.7	200.0	221.3	242.6	264.0	309.4	354.8	400.2	Liquid temperature	55°C	131°F
Current cons. [A]	1.22	1.35	1.48	1.62	1.76	2.04	2.32	2.61	Return gas temp.	32°C	90°F
COP [W/W]	1.43	1.45	1.48	1.48	1.49	1.45	1.42	1.40			
EER [BTU/Wh]	4.87	4.96	5.04	5.06	5.07	4.95	4.85	4.78			

LBP: EN12900	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	192. 8	216. 5	240. 3	266 .2	292. 0	332. 1	372. 2	412. 3	Evaporation pressure	-35°C	-31°F
Capacity [BTU /h]	658	740	821	909	997	113 4	127 1	1408	Condensing pressure	40°C	104°F
Power cons. [W]	125. 5	137. 6	149. 7	168 .1	186. 4	222. 0	257. 6	293. 2	Liquid temperature	40°C	104°F
Current cons. [A]	0.88	0.96	1.04	1.1 5	1.26	1.50	1.74	1.98	Return gas temp.	20°C	68°F
COP [W/W]	1.54	1.57	1.61	1.5 8	1.57	1.50	1.45	1.41			
EER [BTU/Wh]	5.25	5.37	5.48	5.4 1	5.35	5.11	4.93	4.80			

MBP: ASHRA E	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	606. 1	685. 7	765. 3	840 .7	916. 0	106 3	121 0	1357	Evaporation pressure	-6.7°C	20°F
Capacity [BTU /h]	207 0	234 2	261 4	287 1	312 8	363 1	413 3	4635	Condensing pressure	54.4°C	130°F
Power cons. [W]	260. 8	295. 0	329. 1	360 .3	391. 6	462. 2	532. 9	603. 5	Liquid temperature	46.1°C	115°F
Current cons. [A]	1.74	1.96	2.18	2.3 8	2.58	2.99	3.39	3.80	Return gas temp.	35°C	95°F
COP [W/W]	2.32	2.33	2.33	2.3 3	2.34	2.30	2.27	2.25			
EER [BTU/Wh]	7.94	7.94	7.94	7.9 7	7.99	7.85	7.76	7.68			

MBP: CECOM AF	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	481. 7	546. 4	611. 2	670 .1	729. 0	845. 2	961. 3	1077	Evaporation pressure	-10°C	14°F
Capacity [BTU /h]	164 5	186 6	208 7	228 8	249 0	288 6	328 3	3680	Condensing pressure	55°C	131°F
Power cons. [W]	246. 7	279. 5	312. 2	341 .0	369. 8	436. 0	502. 2	568. 4	Liquid temperature	55°C	131°F
Current cons. [A]	1.65	1.86	2.07	2.2 6	2.44	2.83	3.21	3.59	Return gas temp.	32°C	90°F
COP [W/W]	1.95	1.96	1.96	1.9 65	1.97	1.94	1.94	1.90			
EER [BTU/Wh]	6.67	6.68	6.69	6.7 1	6.73	6.62	6.54	6.47			

MBP: EN1290 0	230 V, 50/60 Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	543. 4	608. 4	673. 3	736 .2	799. 1	928. 6	105 8	1188	Evaporation pressure	-10°C	14°F
Capacity [BTU /h]	185 6	207 8	230 0	251 4	272 9	317 1	361 4	4057	Condensing pressure	45°C	113°F
Power cons. [W]	226. 8	254. 8	282. 7	309 .7	336. 8	402. 0	467. 3	532. 5	Liquid temperature	45°C	113°F
Current cons. [A]	1.52	1.70	1.88	2.0 5	2.23	2.61	3.00	3.38	Return gas temp.	20°C	90°F
COP [W/W]	2.40	2.39	2.38	2.3 8	2.37	2.31	2.27	2.23			
EER [BTU/Wh]	8.18	8.16	8.13	8.1 2	8.10	7.89	7.73	7.62			

3.5 Capacity and Performance Data NLV8.0CN

LBP: ASHRAE	230 V, 50/60Hz, fan cooling F2										
Speed (rpm)	2000	2250	2500	2750	3000	3500	4000	4500	Test conditions		
Capacity [W]	271.9	310.4	348.9	383.2	417.5	464.3	511.1	557.9	Evaporation pressure	-23.3°C	-10°F
Capacity [BTU/h]	929	1060	1192	1309	1426	1586	1745	1905	Condensing pressure	54.4°C	130°F
Power cons. [W]	147.7	165.8	184.0	201.7	219.5	252.1	284.7	317.4	Liquid temperature	32.2°C	90°F
Current cons. [A]	1.02	1.13	1.25	1.36	1.47	1.69	1.90	2.12	Return gas temp.	32.2°C	90°F
COP [W/W]	1.84	1.87	1.90	1.90	1.90	1.84	1.80	1.76			
EER [BTU/Wh]	6.29	6.39	6.48	6.49	6.50	6.29	6.13	6.00			

LBP: CECOM AF	230 V, 50/60Hz, fan cooling F2										
Speed (rpm)	2000	2250	2500	2750	3000	3500	4000	4500	Test conditions		
Capacity [W]	203.4	232.4	261.4	287.6	313.7	347.4	381.0	414.7	Evaporation pressure	-25°C	-13°F
Capacity [BTU/h]	695	794	893	982	1071	1186	1301	1416	Condensing pressure	55°C	131°F
Power cons. [W]	141.9	159.0	176.0	193.2	210.3	241.9	273.4	305.0	Liquid temperature	55°C	131°F
Current cons. [A]	0.98	1.09	1.20	1.31	1.41	1.62	1.84	2.05	Return gas temp.	32°C	90°F
COP [W/W]	1.43	1.46	1.49	1.49	1.49	1.44	1.39	1.36			
EER [BTU/Wh]	4.89	4.99	5.07	5.08	5.10	4.91	4.76	4.64			

LBP: EN12900	230 V, 50/60Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	154. 6	173. 4	192. 2	212. 9	233. 6	261. 2	288. 7	316. 3	Evaporation pressure	-35°C	-31°F
Capacity [BTU /h]	528	592	657	727	798	892	986	1080	Condensing pressure	40°C	104°F
Power cons. [W]	100. 8	110. 3	119. 8	135. 0	150. 2	175. 0	199. 7	224. 5	Liquid temperature	40°C	104°F
Current cons. [A]	0.72	0.79	0.85	0.94	1.03	1.21	1.39	1.57	Return gas temp.	20°C	68°F
COP [W/W]	1.53	1.57	1.61	1.58	1.56	1.49	1.45	1.41			
EER [BTU/Wh]	5.24	5.37	5.48	5.39	5.31	5.10	4.94	4.81			

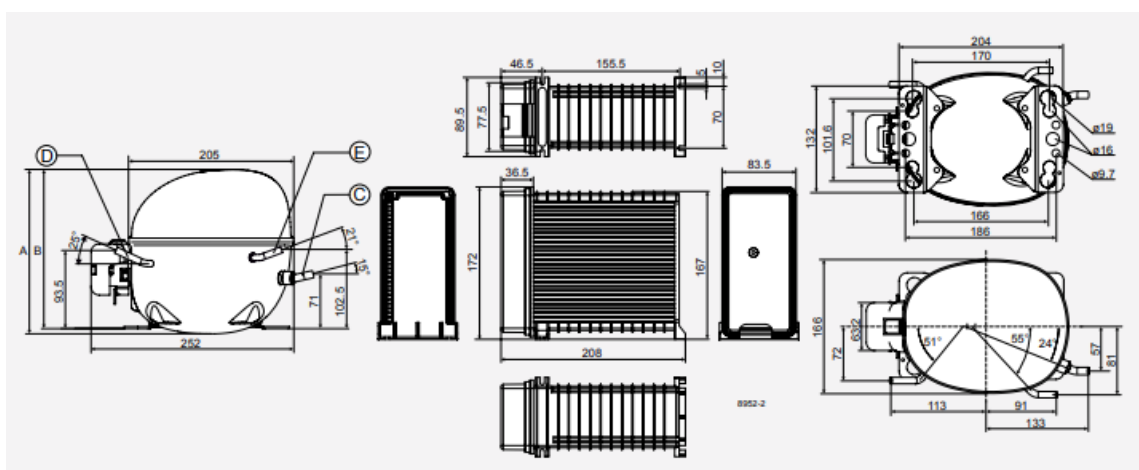
MBP: ASHRAE	230 V, 50/60Hz, fan cooling F2										
Speed (rpm)	200 0	225 0	250 0	275 0	300 0	350 0	400 0	4500	Test conditions		
Capacity [W]	485. 3	548. 7	612. 2	672. 5	732. 8	838. 1	943. 4	1049	Evaporation pressure	-6.7°C	20°F
Capacity [BTU /h]	165 7	187 4	209 1	229 7	250 3	286 2	322 2	3581	Condensing pressure	54.4° C	130°F
Power cons. [W]	205. 5	233. 0	260. 5	285. 3	310. 2	356. 7	403. 3	449. 8	Liquid temperature	46.1° C	115°F
Current cons. [A]	1.39	1.56	1.73	1.89	2.06	2.34	2.62	2.90	Return gas temp.	35°C	95°F
COP [W/W]	2.36	2.36	2.35	2.36	2.36	2.35	2.34	2.33			
EER [BTU/Wh]	8.06	8.04	8.03	8.05	8.07	8.02	7.99	7.96			

MBP: CECOM AF	230 V, 50/60Hz, fan cooling F2										
Speed (rpm)	2000	2250	2500	2750	3000	3500	4000	4500	Test conditions		
Capacity [W]	385.5	437.2	488.9	536.1	583.2	664.4	745.6	826.8	Evaporation pressure	-10°C	14°F
Capacity [BTU/h]	1316	1493	1670	1831	1992	2269	2546	2824	Condensing pressure	55°C	131°F
Power cons. [W]	194.7	221.0	247.4	270.3	293.2	337.3	381.4	425.5	Liquid temperature	55°C	131°F
Current cons. [A]	1.32	1.48	1.65	1.80	1.95	2.22	2.49	2.75	Return gas temp.	32°C	90°F
COP [W/W]	1.98	1.98	1.98	1.98	1.99	1.97	1.96	1.94			
EER [BTU/Wh]	6.76	6.75	6.75	6.77	6.79	6.73	6.68	6.64			

MBP: EN12900	230 V, 50/60Hz, fan cooling F2										
Speed (rpm)	2000	2250	2500	2750	3000	3500	4000	4500	Test conditions		
Capacity [W]	433.9	486.3	538.7	589.0	639.2	739.7	840.2	940.6	Evaporation pressure	-10°C	14°F
Capacity [BTU/h]	1482	1661	1840	2011	2183	2526	2869	3212	Condensing pressure	45°C	113°F
Power cons. [W]	179.4	201.9	224.4	245.9	267.4	312.6	357.7	402.8	Liquid temperature	45°C	113°F
Current cons. [A]	1.22	1.36	1.50	1.64	1.78	2.06	2.34	2.62	Return gas temp.	20°C	90°F
COP [W/W]	2.42	2.41	2.40	2.40	2.39	2.37	2.35	2.34			
EER [BTU/Wh]	8.26	8.23	8.20	8.18	8.16	8.08	8.02	7.98			

DIMENSIONS

Compressor Dimensions		NLV8.0CN NLV10CN NLV12.6CN	
Height	mm (in.)	A B	203 197
Suction connector	location/I.D. mm (in.) angle material seal	C	8.2 15° Copper Rubber plug
Process connector	location/I.D. mm (in.) angle material seal	D	6.2 25° Copper Rubber plug
Discharge connector	location/I.D. mm (in.) angle material seal	E	6.2 21° Copper Rubber plug
Connector tolerance	I.D. mm		



ORDERING

	Item	Code No.	Comment
Controller	Electronic controller (Basic), 220–240 V AC	105N4120	single unit

Compressor/Accessories	NLV8.0CN compressor	105H7813	compressor w/ metric connectors
	NLV10CN compressor	105H7013	compressor w/ metric connectors
	NLV12.6CN compressor	105H6313	compressor w/ metric connectors
	Cover for compressor	103N2008	
	Bolt joint for one compressor	118-1917	
	Bolt joint in quantities	118-1918	
	Snap-on in quantities	118-1919	



SECOP GROUP: AROUND THE WORLD

12 international partners for advanced developments
 33 laboratories located in Austria, Germany, Slovakia, China, U.S.A., and Turkey
 160 R&D engineers and technicians
 440 patents globally
 50+ countries with customer support



Secop is the expert for advanced hermetic compressor technologies and cooling solutions in commercial refrigeration. We develop high performance stationary and mobile cooling solutions for leading international commercial refrigeration manufacturers and are the first choice when it comes to leading hermetic compressors and electronic controls for refrigeration solutions for light commercial and DC-powered applications. Secop was formerly known as Danfoss Compressors and is one of the founding fathers of modern compressor technology with years of experience that goes back to the beginning of the 1950s.

Flensburg: Sales and R&D

Turin: Sales

Gleisdorf: R&D

Zlaté Moravce: R&D, Logistics, and Manufacturing

Tianjin: Sales, R&D, Logistics, and Manufacturing

Atlanta: Sales and Logistics



Secop GmbH · Lise-Meitner-Str. 29 · 24941 Flensburg, Germany · Tel: +49 461 4941 0 · www.secop.com

Secop accepts no responsibility for possible errors in catalogs, brochures, and other printed material. Secop reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequent changes being necessary to specifications already agreed. All trademarks in this material are the property of the respective companies. Secop and the Secop logotype are trademarks of Secop GmbH. All rights reserved.

Produced by Secop | June 2024

DES.S.300.R1.02

Documents / Resources

	SECOP 105N4120 Basic Controllers for NLV-CN Compressors [pdf] Instruction Manual NLV12.6CN, NLV10CN, NLV8.0CN, 105N4120 Basic Controllers for NLV-CN Compressors, 105 N4120, Basic Controllers for NLV-CN Compressors, Basic Controllers, NLV-CN Compressors Co ntrollers, Controller
--	--

References

- [Secop Solutions for Commercial Refrigeration | Secop](#)
- [User Manual](#)

Manuals+, Privacy Policy

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.