Electrical interface document for cab

AMSTERDAM

Release History

Release History

	name	Department	Date	Signature
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Released by				

Revision Table

Revision	Date	Revised section,
01	2010-06-23	First issue
02	2010-06-25	Change –X01, –X02, -X03,-X04
		Change CAN1 to CAN11 and delete CAN2
03	2010-08-02	Change USB
04	2010-10-20	Change the name of EID
05	2010-11-08	Change connector –X02
06	2010-11-16	Change connector –X02
07	2011-01-26	Change connector –X02 –X04
08	2011-06-27	Use the “O” type contact required by ALSTOM

Distribution List

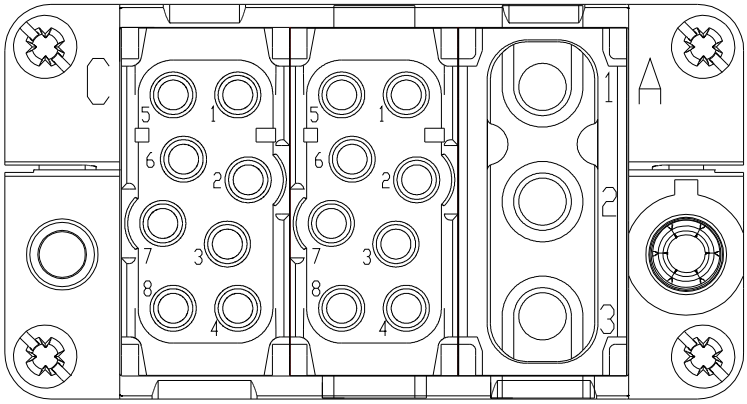
1. Interface –X01 (Harting plug AC CAB UNIT)

-X01						minimal
Pin	to device		No. wire control panel	No. wire unit	nominal current [A]	cross-section [mm²]
A1	Power supply	HAN C-Module		401	20	6.0
A2	Power supply			402	20	6.0
A3	Power supply			403	20	6.0
B1	Supply air fan2	HAN EE-Module		360	1.3	1.0
B2	Supply air fan2			314	1.3	1.0
B3	Heater2			322	3.6	1.0
B4	Heater2			323	3.6	1.0
B5	Heater2			324	3.6	1.0
B6	Supply air fan2			553	1.3	1.0
B7	Supply air fan2 low speed			554	1.3	1.0
B8	Supply air fan2 high speed			555	1.3	1.0
C1	Supply air fa2	HAN EE-Module		510		1.5
C2	Supply air fan2			509		1.5
C3	reserve					
C4	reserve					
C5	reserve					
C6	reserve					
C7	reserve					
C8	reserve					
19	13	Number of pins with 6 reserve				

Configuration of connection (ALSTOM, SFRT): piece page (Harting02_1)
ALSTOM: car side
SFRT: unit side

Plug:	HAN 10B			
Hood(side entry):	HAN M25	19 30 010 1521	1	06.44
Frame for 3 modules:		09 14 010 0303	1	06.09
Moduler				
HAN C:	Female	09 14 003 3102	1	06.15
Crimp-K.	F 6.0qmm² Ag	09 32 000 6208	3	06.15
HAN EE:	Female	09 14 008 3101	2	06.19
Crimp-K.	F 1.0qmm² Ag	09 33 000 6205	8	06.19
Crimp-K.	F 1.5qmm² Ag	09 33 000 6204	2	06.19
Coding pin.	Female	09 33 000 9954	6	09.19

Socket:	HAN 10B			
Housing:	HAN	09 30 010 0301	1	06.44
Frame for 3 modules:		09 14 010 0313	1	06.09
Moduler				
HAN C :	Male	09 14 003 3002	1	06.15
Crimp-K.	M 6.0qmm² Ag	09 32 000 6108	3	06.15
HAN EE :	Male	09 14 008 3001	2	06.19
Crimp-K.	M 1.0qmm² Ag	09 33 000 6105	8	06.19
Crimp-K.	M 1.5qmm² Ag	09 33 000 6104	2	06.19



2. Interface –X02 (Harting plug DC110V CAB UNIT)

-X02						minimal
Pin	to device		No. wire control panel	No. wire unit	nominal current [A]	cross-section [mm²]
1	DC+110V power supply	HAN EE-Module		601	<1	1,5
2	DC-110V power supply			602	<1	1.5
3	Heater2 overload1			325	<1	1.0
4	Thermostat2			328	<1	1.0
5	Switch SA2 power			615	<1	1.0
6	SA2 high vent.			1100	<1	1.0
7	SA2 low vent.			1101	<1	1.0
8	SA2 analog output			1120	<1	0.75
9	SA2 analog output			1121	<1	0.75
10	SA2 analog output			screen	<1	0.75
11	Switch SA3 power			670	<1	1.0
12	SA3 emergency_H			1129	<1	1.0
13	SA3 high vent.			1104	<1	1.0
14	SA3 low vent.			1105	<1	1.0
15	SA3 analog output			1122	<1	0.75
16	SA3 analog output			1123	<1	0.75
17	SA3 analog output			screen	<1	0.75
18	SA1 analog output			701	<1	0.75
19	SA1 analog output			702	<1	0.75
20	SA1 analog output			screen	<1	0.75
21	Heater2 overload2			326	<1	1.0
22	Thermostat1			327	<1	1.0
23-32	reserve					
32	22	Number of pins with 10 reserve				

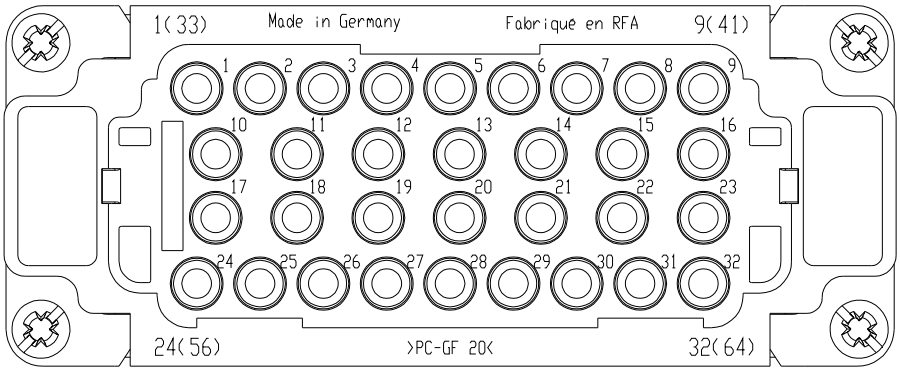
Configuration of connection (ALSTOM, SFRT): piece page (Harting02_1)
ALSTOM: car side
SFRT: unit side

Plug: HAN 16B
Hood(side entry): HAN M25 19 30 016 1521 1 03.24

Moduler
HAN EE: Female 09 32 032 3101 1 03.23
Crimp-K. F 1.5qmm² Ag 09 33 000 6204 2 03.23
Crimp-K. F 1.0qmm² Ag 09 33 000 6205 11 03.23

Crimp-K.	F 0.75qmm² Ag	09 33 000 6214	9	03.23
Coding pin.	Female	09 33 000 9954	10	03.23

Socket:	HAN 16B			
Housing:	HAN	09 30 016 0301	1	03.24
Moduler				
HAN EE :	Male	09 32 032 3001	1	03.23
Crimp-K.	M 1.5qmm² Ag	09 33 000 6104	2	03.23
Crimp-K.	M 1.0qmm² Ag	09 33 000 6105	11	03.23
Crimp-K.	M 0.75qmm² Ag	09 33 000 6114	9	03.23



3. FPC08 unit plug –CN11 (Harting plug female ,CAN)

-CN11						minimal
Pin	to device		No. wire control panel	No. wire unit	nominal current [A]	cross-section [mm²]
1		D-SUB				
2	-CAN				<1	0.5
3	0VCAN				<1	0.5
4						
5						
6						
7	+CAN				<1	0.5
8						
9						
CH	Screen					
9	3	Number of pins with 6 reserve				

The cable type is: TWINAX 2X0.5 120 OHMS+1X0.5mm2 (Nexans) screen should be connect to the harting housing!

Configuration of connection (ALSTOM, SFRT): piece page (Harting 11-1)
ALSTOM: car side
SFRT: unit side

plug: D-SUB

Top entry hood	61 03 001 3010	1	08.06
Crimp contact (male)	61 03 000 0073	3	02.30
Crimp terminal (male)	09 67 009 5601	1	02.28
Crimp flange	61 03 000 0066	1	08.08
Crimp ferrule	61 03 000 0051	1	08.08

socket: D-SUB

Top entry hood	61 03 001 3010	1	08.06
Crimp contact (female)	61 03 000 0074	3	02.30
Crimp terminal (female)	09 67 009 4701	1	02.28
Crimp flange	61 03 000 0066	1	08.08
Crimp ferrule	61 03 000 0051	1	08.08

4. Plug –USB (USB plug ,RS232)

-USB						minimal
Pin	to device		No. wire control panel	No. wire unit	nominal current [A]	cross-section [mm²]
1		D-SUB			<1	0.5
2					<1	0.5
3					<1	0.5
4					<1	0.5
4	4	Number of pins with 0 reserve				

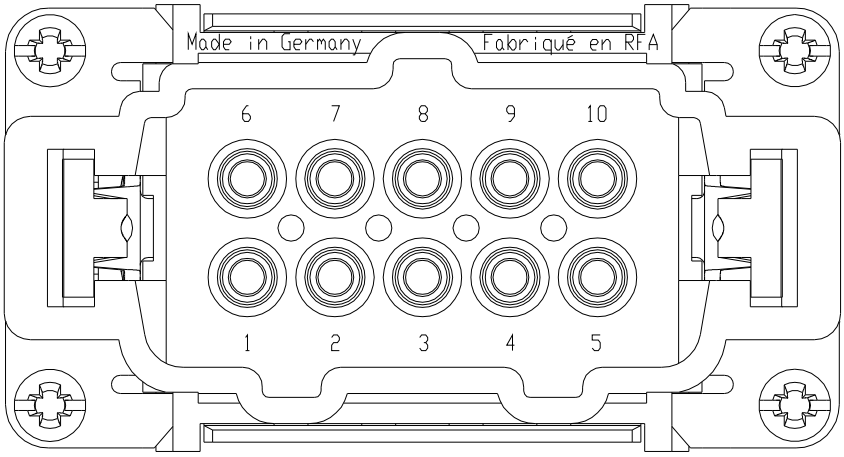
5. Interface –X03 (Harting plug AC CAB AEROTHERM)

-X03						minimal
Pin	to device		No. wire control panel	No. wire unit	nominal current [A]	cross-section [mm²]
1	Supply air fan2			350	1.3	1.0
2	Supply air fan2	HAN E-Module		351	1.3	1.0
3	Heater2			352	3.6	1.0
4	Heater2			353	3.6	1.0
5	Heater2			354	3.6	1.0
6	Supply air fan2			550	1.3	1.0
7	Supply air fan2 low speed			551	1.3	1.0
8	Supply air fan2 high speed			552	1.3	1.0
9	Supply air fan2			521		1.5
10	Supply air fan2			522		1.5
10	10	Number of pins without reserve				

Configuration of connection (ALSTOM, SFRT): piece page (Harting02_1)
ALSTOM: car side
SFRT: unit side

Plug:	HAN 10B			
Hood(side entry):	HAN M25	19 30 010 1521	1	03.20
Moduler				
HAN E:	Female	09 33 010 2702	1	03.18
Crimp-K.	F 1.5qmm² Ag	09 33 000 6204	2	03.18
Crimp-K.	F 1.0qmm² Ag	09 33 000 6205	8	03.18

Socket:	HAN 10B			
Housing:	HAN	09 30 010 0301	1	03.20
Moduler				
HAN E :	Male	09 33 010 2602	1	03.18
Crimp-K.	M 1.5qmm² Ag	09 33 000 6104	2	03.18
Crimp-K.	M 1.0qmm² Ag	09 33 000 6105	8	03.18



6. Interface –X04 (Harting plug DC CAB AEROTHERM)

-X04						minimal
Pin	to device		No. wire control panel	No. wire unit	nominal current [A]	cross-section [mm²]
1	Heater2 overload1	HAN E-Module		355	<1	1.0
2	Thermostat2			358	<1	1.0
3	Heater2 overload2			356	<1	1.0
4	Thermostat1			357	<1	1.0
5	Reserve					
6	Reserve					
6	4	Number of pins with 2 reserve				

Configuration of connection (ALSTOM, SFRT): piece page (Harting02_1)
ALSTOM: car side
SFRT: unit side

Plug:	HAN 06B			
Hood(side entry):	HAN M25	19 30 006 1541	1	03.16
Moduler				
HAN E:	Female	09 33 006 2702	1	03.14
Crimp-K.	F 1.0qmm² Ag	09 33 000 6205	4	03.14
Coding pin.	Female	09 33 000 9954	2	03.14

Socket:	HAN 06B			
Housing:	HAN	09 30 006 0301	1	03.17
Moduler				
HAN E :	Male	09 33 006 2602	1	03.14
Crimp-K.	M 1.0qmm² Ag	09 33 000 6105	4	03.14