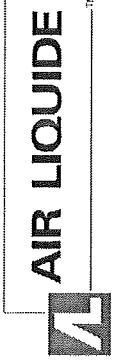
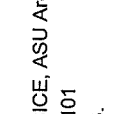
 <b>AIR LIQUIDE</b>	<b>Electric Consumer List</b>		<b>ASU Area</b>	
	<b>Diagram No.:</b> 792.86811 <b>Revision:</b> As B. <b>Date:</b> 30.11.2006 <b>Diagram state:</b> As B.	<b>Project:</b> KOSICE, ASU Area <b>Project No.:</b> K70101 <b>List Rev.:</b> As B.		

COVER-SHEET


Distribution		Processing			
Name	Department	Date	Name	Checked by	Status
H. Delattre	ALE	25.09.2004	Rüdiger	Woller	Rev.
H. Dr. Nipper	IA.Z	09.02.2006	Dziadek/IES	Dr. Nipper	Rev2C
H. Dräger	IC.Z	21.02.2006	Dziadek/IES	Dr. Nipper	Rev2D
H. Eichler	IE.Z	15.03.2006	Dziadek/IES	Dr. Nipper	Rev3
H. Juckel	IV.Z	15.02.2007	Dziadek/IES	Dr. Nipper	As B.
H. Korchi	ALE				
H. Lehmann	ALE				
H. Schürgers	IM.Z				
H. Siudak	IM.Z				
H. Wilde	IM.Z				

	<h2 style="text-align: center;">Electric Consumer List</h2> <h3 style="text-align: center;">ASU Area</h3>				<b>Diagram No.:</b> 792.86811 <b>Revision:</b> As B. <b>Date:</b> 30.11.2006 <b>Diagram state:</b> As B.			<b>Project:</b> KOSICE, ASU Area <b>Project No.:</b> K70101 <b>List Rev.:</b> As B.		


TAG No.	Designation	PID Sheet	Manu- facturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
MCC	Transformer 2500 kVA				400	2500 kVA		3500		1	21x1x300				
MCC	Tank Area Container				400	300		550		10	2x3x240/120				
MCC	Chiller Unit MCKK				400	200		400		10	2x4x120/70				
MCC	RMSUO 2				400	60		120		10	4x35/25				
MCC	RMSUO 1				400	60		120		10	4x35/25				
MCC	RMSO 2				400	60		120		10	4x35/25				
MCC	RMSO 1				400	60		120		10	4x35/25				
M 11001	Motor for Main Air Compressor MAC	001	ELIN EBG	HKM-180 E04 LSC-06M	6000 +/-10%	8600	1492	929	0,915	T80	6x1x240; N2xS2Y No.526020 05001	IP 55	B F		2005 19500kg

	<b>Electric Consumer List</b> <b>ASU Area</b>				<b>Diagram No.:</b> 792.86811 <b>Revision:</b> As B. <b>Date:</b> 30.11.2006 <b>Diagram state:</b> As B.	<b>Project:</b> KOSICE, ASU Area <b>Project No.:</b> K70101 <b>List Rev.:</b> As B.
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TAG No.	Designation	PID Sheet	Manufacturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
W 11706	Space Heater Motor MAC Compressor	027	(ELIN EBG)		230	2,75				9	4x2,5				
M 11803	Motor for Oil Demister MAC Compressor	027	Nash-Elmo	G200 2BH1400-7AH06	400	0,7	2760	2,2		3; HV-NS	4Bx1,5; CYKY	IP 55			
W 11810 - W 11812	Oil Heater MAC Compressor	027			380	3x3,0		16		9	4x2,5	IP 54			
M 11820	Motor for Oil Pump MAC	027	Marelli	A4C200 LA2-V1	400	18,5	2950	35	0,84	5; HV-NS	4Bx6; CYKY	IP 55	B/F		
M 13100	Motor for DCAC Pump 1	002	Allweiler	A4C250M2-B3	400	55	2955	99	0,87	2	3x50/35; CYKY	IP 55			
M 13200	Motor for DCAC Pump 2	002	Allweiler	A4C250M2-B3	400	55	2955	99	0,87	2	3x50/35; CYKY	IP 55			
M 14100	Motor for Chill Tower Water Pump 1	003	Allweiler	A4C200LA2-B3	400	30	2950	54	0,87	2	3x50/35; CYKY	IP 55			
M 14200	Motor for Chill Tower Water Pump 2	003	Allweiler	A4C200LA2-B3	400	30	2950	54	0,87	2	3x50/35; CYKY	IP 55			

	<h2 style="text-align: center;">Electric Consumer List</h2> <h3 style="text-align: center;">ASU Area</h3>					<b>Diagram No.:</b> 792.86811 <b>Revision:</b> As B. <b>Date:</b> 30.11.2006 <b>Diagram state:</b> As B.			<b>Project:</b> KOSICE, ASU Area <b>Project No.:</b> K70101 <b>List Rev.:</b> As B.		

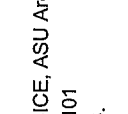
TAG No.	Designation	PID Sheet	Manu- facturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
LH 15011	Condensat Trap 1				230	0,700		3		11	3x1,5				
LH 15021	Condensat Trap 2				230	0,700		11		3	3x1,5				
LH 15031	Condensat Trap 3				230	0,700		3		11	3x1,5				
M 16001	Motor for Booster Air Compressor BAC	006	ELIN EBG	HKM-171 E04 LOC- 06M	6000 +-10%	6700	1488	770	0,86	T80	6x1x185; N2xS2Y No.526019 05001	IP 55	F		2005 16000kg
HKM 16073	Motor for Butterfly Valve	006	AUMA VALVE BAC		400	1,5		3,5		10	4x2,5				
W 16706	Space Heater Motor BAC Compressor	028	(ELIN EBG)		230	2,75				9	4x2,5				
M 16803	Motor for Oil Demister BAC Compressor	028	Nash-Elmo	G200 2BH1400- 7AH06	400	0,7	2760	2,2		3; HV-NS	4Bx1,5; CYKY	IP 55			
W 16810	Oil Heater BAC Compressor	028	RONI	NE-FP	400	16		23,1		9	4x6 Part No 22060	IP 55			

	<b>Electric Consumer List</b> <b>ASU Area</b>				Diagram No.: 792.86811 Revision: As B. Date: 30.11.2006 Diagram state: As B.		Project: KOSICE, ASU Area Project No.: K70101 List Rev.: As B.	

TAG No.	Designation	PID Sheet	Manu- facturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
M 16820	Motor for Oil Pump BAC Compressor 1	028	WEG	180M4	400	18,5	1470	34,5	0,84	5; HV-NS	4Bx6; CYKY	IP 55			
W 22011	Analysis Vaporizer for AE 22011	014			230	0,4				11	3x2,5		F/B		COLD-BOX + 3 meter
W 23013	Analysis Vaporizer for AE 23013	011			230	0,4				11	3x2,5				HE-BOX + 3 meter
W 23016	Analysis Vaporizer for AE 23016	011			230	0,4				11	3x2,5				HE-BOX + 3 meter
MG 24101	Generator for Expander Turbine 1	007	SCHORCH	KH4355MAB 01G-2	400	300	3013	470	0,92	3	2x3x150/70; CYKY 20016501/1	IP 55			2005 1750kg
W 24160	Oil Heater Expander Turbine 1	029	Vulcani Czepak	CES4-G2 TRTB	400	3				9	4x2,5 Part No.6970 130141				
M 24163	Motor for Oil Pump Expander Turbine 1	029	Siemens	1LA71134AA 11	400	4	1440	8,2	0,83	4; HV-NS	4Bx2,5; CYKY	IP 55			
M 24182	Motor for Oil Demister Expander Turbine1	029	Siemens	1LA71134AA 11	400	0,7	2760	2,2		3; HV-NS	4Bx1,5; CYKY	IP 55			

	<b>Electric Consumer List</b> <b>ASU Area</b>	Diagram No.: 792.86811 Revision: AS B. Date: 30.11.2006 Diagram state: AS B.	Project: KOSICE, ASU Area Project No.: K70101 List Rev.: AS B.
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TAG No.	Designation	PID Sheet	Manu- facturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
MG 24201	Generator for Expander Turbine 2	008	SCHORCH	KH4355MAB 01G-2	400	300	3013	470	0,92	4	2x3x150/70; CYKY 20016501/2	IP 55			2005 1750kg
W 24260	Oil Heater Expander Turbine 2	030	Vulcani Czepek	CES4-G2 TRTB	400	3				9	4x2,5 Part No.6970 130141				
M 24263	Motor for Oil Pump Expander Turbine 2	030	Siemens	1LA71134AA 11	400	4	1440	8,2	0,83	4; HV-NS	4Bx2,5; CYKY	IP 55			
M 24282	Motor for Oil Demister Expander Turbine2	030	Siemens	1LA71134AA 11	400	0,7	2760	2,2		3; HV-NS	4Bx1,5; CYKY	IP 55			
W 40009	Analysis Vaporizer for AE 40009	017			230	0,4				11	3x2,5				COLD-BOX + 45 meter
W 40014	Analysis Vaporizer for AE 40014	017			230	0,4				11	3x2,5				COLD-BOX + 45 meter
M 40100	Motor for LAR Reflux Pump	016	Theo Halter	DDGI60 MA2 F-AS	400	11	2935	19,9	0,90	5; HV-NS	4x4 SH; NYCWY	IP 55			supply with frequency converter with Thermistor protection (2x3xPTC) and 2xPt100 for leakage detection. Motor with bearing heater
W 40110	Bearing Heater for LAR Pump P40100	016			230	0,070				5	3x1,5				Motor Reflux Pump

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
TAG No.	Designation	PID Sheet	Manu- facturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
W 43033	Analysis Vaporizer for AE 43033	018			230	0,4				11	3x2,5				COLD-BOX + 15 meter
M 44001	Motor for LAR Truck Filling Pump	042	Theo Halter	DDA132 SB2	400	7,5	2860	13,8	0,90	0; VT-TF	4x4; CYKY	IP 55			with Thermistor protection (2x3xPTC); 2xPt100 for leakage detection
M 48001	Motor for HP LAR Back up Pump	043	Theo Halter	DDG200 LA2 FAS	400	30	2940	52,7	0,90	0; VT-TF	4x25; CYKY	IP 55			with Thermistor protection (2x3xPTC); 2xPt100 for leakage detection
DCS 6,3 kV C31 -T80					24					C31	24x2,5				
M 61100	Motor for LOX internal compression Pump1	012	AKH	FN225ML-2/F	400	50	4300-5300 (75 Hz)	90		7; HV-NS	4x50 SH; NYCWY Freq. Conv. 72-88Hz	IP 55	F		supply with frequency converter with Thermistor protection (2x3xPTC) and 2xPt100 for leakage detection. Motor with bearing heater.
M 61100/1	Ventilator LOX Pump 1	012			400	0,630		1,2		7	4x1,5				fehlt im R&I
W 61110	Bearing Heater for LOX Pump P61100	012			230	0,105				7	3x1,5				Motor LOX Pump 1
M 61200	Motor for LOX internal compression Pump2	012	AKH	FN225ML-2/F	400	50	4300-5300 (75 Hz)	90		8; HV-NS	4x50 SH; NYCWY	IP 55	F		supply with frequency converter with Thermistor protection (2x3xPTC) and 2xPt100 for leakage detection. Motor with bearing heater

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**Date of print:** 20. Feb. 07

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	<h2 style="text-align: center;">Electric Consumer List</h2> <h3 style="text-align: center;">ASU Area</h3>				<b>Diagram No.:</b> 792.86811 <b>Revision:</b> As B. <b>Date:</b> 30.11.2006 <b>Diagram state:</b> As B.		<b>Project:</b> KOSICE, ASU Area <b>Project No.:</b> K70101 <b>List Rev.:</b> As B.	

TAG No.	Designation	PID Sheet	Manufacturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
M 61200/1	Ventilator LOX Pump 2	012			400	0,630		1,2		8	4x1,5				fahlt im R&I
W 61210	Bearing Heater for LOX Pump P61200	012			230	0,105				8	3x1,5				Motor LOX Pump 2
M 70001	Motor for GAN Compressor 1	019	ELIN EBG	HKM-156 Z02 FIC-06M	6000 +/-10%	1700	2978	189	0,905	T81	3x1x120; N2xS2Y No.526018 05002	IP 55	B F/B		2005 6000kg
W 70706	Space Heater Motor N2 Compressor 1	021	(ELIN EBG)		230	0,63		4		9	4x1,5; 2xMCC 9				
M 70803	Motor for Oil Demister GAN Compressor 1	021	Nash-Elmo	G200 2BH1400- 7AH06	400	0,7	2760	2,2		9; HV-NS	4Bx1,5; CYKY	IP 55			
W 70810	Oil Heater for N2 Compressor 1	021	Elmess	HF4,5	400	4,5				9	4x2,5 Part No.6970 289785	IP 54			
W 70815	Oil Heater for N2 Compressor 1	021	Elmess	HF4,5	400	4,5				9	4x2,5 Part No.6970 289785				
M 70820	Motor for Oil Pump GAN Compressor 1	021	Allweiler	7AA100L-2	400	3	3000-3600	6	0,85	9; HV-NS	4Bx2,5; CYKY	IP 55			



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TAG No.	Designation	PID Sheet	Manu- facturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
M 71100	Motor for LIN internal compression Pump1	015	Theo Halter	DDA132 SB2 F-AS	400	7,5	4700	13,8		6; HV-NS	4x4 SH; NYCWY	IP 55			supply with frequency converter with Thermistor protection (2x3xPTC) and 2xPt100 for leakage detection. Motor with bearing heater
W 71110	Bearing Heater for LIN Pump P711100	015			230	0,040				6	3x1,5				Motor LIN Pump 1
M 71200	Motor for LIN internal compression Pump2	015	Theo Halter	DDA132 SB2 F-AS	400	7,5	4700	13,8		6; HV-NS	4x4 SH; NYCWY	IP 55			supply with frequency converter with Thermistor protection (2x3xPTC) and 2xPt100 for leakage detection. Motor with bearing heater
W 71210	Bearing Heater for LIN Pump P71200	015			230	0,040				6	3x1,5				Motor LIN Pump 2
M 77001	Motor for GAN Compressor 2	020	ELIN EBG	HKM-156 Z02 F1C-06M	6000 +/-10%	1700	2978	189	0,905	T81	3x1x120; N2xS2Y No.526018 05001	IP 55	B F/B		2005 6000kg
W 77706	Space Heater Motor N2 Compressor 2	022	(ELIN EBG)		230	0,63		4		9	4x1,5; 2xMCC 9				
M 77803	Motor for Oil Demister GAN Compressor 2	022	Nash-Elmo	G200 2BH1400- 7AH06	400	0,7	2760	2,2		3; HV-NS	4Bx1,5; CYKY	IP 55			
W 77810	Oil Heater for N2 Compressor 2	022	Elmess	HF4,5	230	4,5				9	4x2,5 Part No.6970 289785	IP 54			

<div><div><div>AIR LIQUIDE</div><div></div></div></div>			Electric Consumer List ASU Area							Diagram No.: 792.86811 Revision: As B. Date: 30.11.2006 Diagram state: As B.			Project: KOSICE, ASU Area Project No.: K70101 List Rev.: As B.		
TAG No.	Designation	PID Sheet	Manu- facturer	Type	Voltage (V)	Nominal power (kW)	Nominal speed (min-1)	Nominal current (A)	Power factor	Switch gear output	Cabletype and No.	Protection	Operat. Insul. class	Is/In %	Remarks
W 77815	Oil Heater for N2 Compressor 2	022	Elmess	HF4,5	230	4,5				9	4x2,5 Part No.6970 289785				
M 77820	Motor for Oil Pump GAN Compressor 2	022	Allweiler	7AA100L-2	400	3	3000-3600	6	0,85	4; HV-NS	4Bx2,5; CYKY	IP 55			
MCC -MCC	Sockets + Lighting				400	200		400		10	4x150/70				
MCC T11810	Safety-Thermostat				230					9	3x1,5				
MCC T11811	Safety-Thermostat				230					9	3x1,5				
MCC T11812	Safety-Thermostat				230					9	3x1,5				