

**Site Documentation
K 70101 ASU No. 9 Košice**

Chapter 5.9 Installation instructions

- Hook - Up Tankfarm

**AIR LIQUIDE**

Air Liquide AGS GmbH

Hook – Up

Allocation Table

TANKFARM**HU_LIST**


Page 1 of 5


Number of Hookups

HOOK-UP	Summation	HOOK-UP	Summation	HOOK-UP	Summation	HOOK-UP	Summation
HU_C03	5	HU_T03	4				
HU_C07	5	HU_T07	4				
HU_F01	4	HU_V10	5				
HU_L05	2	HU_V12	31				
HU_P01	25	HU_V20	3				
HU_P02 heated	2	HU_V22	13				
HU_P03	10	HU_V30	3				
HU_P04	2						
HU_Q01	2						
HU_T01	9						

TAG-NO.	DESIGNATION	HOOK-UP	PI-SHT.	1_DEV_TAG	1_DEV_KIND	2_DEV_TAG	2_DEV_KIND
F 20003	HP-GAN TO CUSTOMER	HU_F01	010	FE20003	Flow element, orifice	FT20003	Transmitter, diff.-press.
F 20013	HP-GOX TO CUSTOMER	HU_F01	010	FE20013	Flow element, orifice	FT20013	Transmitter, diff.-press.
F 63033	LOX CONVERTER CYCLE	HU_F01	032	FE63033	Flow sensor, venturi nozzle	FT63033	Transmitter, diff.-press.
F 70041	MP-GAN TO CUSTOMER	HU_F01	020	FE70041	Flow element, orifice	FT70041	Transmitter, diff.-press.
H 20003	HP-GAN TO CUSTOMER	HU_V12	010	HV20003	Globe valve		
H 20013	HP-GOX TO CUSTOMER	HU_V12	010	HV20013	Globe valve		
H 20014	HP-GOX TO CUSTOMER	HU_V12	010	HV20014	Globe valve		
H 62008	BOTTOM VALVE B62001	HU_V10	032	HV62008	Bottom valve		
H 62009	BOTTOM VALVE B62001	HU_V10	032	HV62009	Bottom valve		
H 62051	LOX TANK INLET VALVE	HU_V12	032	HV62051	Globe valve		
H 62052	LOCK FILLING LOX TANK	HU_V12	032	HV62052	Globe valve		
H 63016	LOX FROM LP-TANK B62001	HU_V12	032	HV63016	Globe valve		
H 63034	LOX CONVERTER CYCLE	HU_V12	032	HV63034	Globe valve		
H 64110	LOX FROM LP-TANK B62001	HU_V22	033	HV64110	Globe valve		
H 64150	LIQUID VALVE P64101	HU_V22	033	HV64150	Globe valve		
H 64210	LOX FROM LP-TANK B62001	HU_V22	033	HV64210	Globe valve		
H 64250	LIQUID VALVE P64201	HU_V22	033	HV64250	Globe valve		
H 70041	MP-GAN TO CUSTOMER	HU_V20	020	HK70041	Butterfly valve		

2	17.03.05	Möller	JE	updated					
1	04.01.05	Möller	JE	updated					
0	01.12.04	Möller	JE	Initial Version					
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment

 AIR LIQUIDE <small>TM</small>		Hook – Up Allocation Table				HU_LIST			
Air Liquide AGS GmbH		TANKFARM				Page 2 of 5			
TAG-NO.	DESIGNATION	HOOK-UP	PI-SHT.	1_DEV_TAG	1_DEV_KIND	2_DEV_TAG	2_DEV_KIND		
H 72008	BOTTOM VALVE B72001	HU_V10	035	HV72008	Bottom valve				
H 72009	BOTTOM VALVE B72001	HU_V10	035	HV72009	Bottom valve				
H 72051	LIN TANK INLET VALVE 1	HU_V12	035	HV72051	Globe valve				
H 72052	LIN TANK INLET VALVE 2	HU_V12	035	HV72052	Globe valve				
H 72053	LIN CONVERTER CYCLE	HU_V12	035	HV72053	Globe valve				
H 73014	MP-LIN TO TOP 10	HU_V12	038	HV73014	Globe valve				
H 73110	LIN FROM LP-TANK B72001 TO P73101	HU_V12	037	HV73110	Globe valve				
H 73150	LIQUID VALVE P73101	HU_V12	037	HV73150	Globe valve				
H 73210	LIN FROM LP-TANK B72001 TO P73201	HU_V22	037	HV73210	Globe valve				
H 73250	LIQUID VALVE P73201	HU_V12	037	HV73250	Globe valve				
H 74110	LIN FROM LP-TANK B72001	HU_V12	036	HV74110	Globe valve				
H 74150	LIQUID VALVE P74101	HU_V22	036	HV74150	Globe valve				
H 74210	LIN FROM LP-TANK B72001	HU_V12	036	HV74210	Globe valve				
H 74250	LIQUID VALVE P74200	HU_V22	036	HV74250	Globe valve				
L 62005	LOX TANK B62001	HU_C03	032	LT62005	Transmitter, diff.-press.				
L 62006	OVERFLOW LOX TANK BL62001	HU_C03	032	LT62006	Transmitter, diff.-press.				
L 64030	WATER BATH VAPORIZER GOX	HU_L05	034	LZL64030	Level switch, vibration				
L 72005	LIN TANK B72001	HU_C03	035	LT72005	Transmitter, diff.-press.				
L 72006	OVERFLOW LIN TANK B72001	HU_C03	035	LT72006	Transmitter, diff.-press.				
L 73007	MP LIN TANK B73001	HU_C03	038	LT73007	Transmitter, diff.-press.				
L 73030	WATER BATH VAPORIZER GAN	HU_L05	039	LZL73030	Level switch, vibration				
P 20003	HP-GAN TO CUSTOMER	HU_P01	010	PT20003	Transmitter, pressure				
P 20013	HP-GOX TO CUSTOMER	HU_P01	010	PT20003	Transmitter, pressure				
P 20015	HP-GOX TO CUSTOMER DIS. VALVE UK20013	HU_P01	010	PT20015	Transmitter, pressure				
P 20016	HP-GOX TO CUSTOMER DIS. VALVE UK20014	HU_P01	010	PT20016	Transmitter, pressure				
P 62004	PRESSURIZATION LOX TANK B62001	HU_V12	032	PV62040	Control valve				
P 62005	LOX TANK B62001 BLOW OUT	HU_C07	032	PT62005	Transmitter, pressure				
P 62005	LOX TANK B62001 BLOW OUT	HU_V12	032	PV62005	Control valve				
P 62006	LOX TANK BL62001	HU_C07	032	PS62006	Pressure switch				
P 62011	END PRESSURE LOX PUMP P62001	HU_P03	032	PI62011	Pressure gauge				
P 62012	END PRESSURE LOX PUMP P62001	HU_P01	032	PT62012	Transmitter, pressure				
2	17.03.05	Möller	JE	updated					
1	04.01.05	Möller	JE	updated					
0	01.12.04	Möller	JE	Initial Version					
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment

 AIR LIQUIDE Air Liquide AGS GmbH		Hook – Up Allocation Table TANKFARM				HU_LIST Page 3 of 5	
TAG-NO.	DESIGNATION	HOOK-UP	PI-SHT.	1_DEV_TAG	1_DEV_KIND	2_DEV_TAG	2_DEV_KIND
P 63033	END PRESSURE LOX PUMP P63001	HU_P01	032	PT63033	Transmitter, pressure		
P 63033	END PRESSURE LOX PUMP P63001	HU_V12	032	PV62033	Control valve		
P 64050	GOX BEHIND WATER BATH VAPORIZER	HU_P01	034	PT64050	Transmitter, pressure		
P 64080	STEAM TO WATER BAD VAPORIZER GOX	HU_P02 heated	034	PT64080	Transmitter, pressure		
P 64081	STEAM TO W64001	HU_P03	034	PI64081	Pressure gauge		
P 64101	LOX TO P64101	HU_P03	033	PI64101	Pressure gauge		
P 64150	END PRESSURE LOX PUMP P64101	HU_P01	033	PT64150	Transmitter, pressure		
P 64150	END PRESSURE LOX PUMP P64101	HU_V12	033	HV64170	Control valve		
P 64201	LOX TO P64201	HU_P03	033	PI64201	Pressure gauge		
P 64250	END PRESSURE LOX PUMP P64201	HU_P01	033	PT64250	Transmitter, pressure		
P 64250	END PRESSURE LOX PUMP P64201	HU_V12	033	HV64270	Control valve		
P 70041	MP-GAN TO CUSTOMER	HU_P01	020	PT70041	Transmitter, pressure		
P 72004	PRESSURIZATION LIN TANK B72001	HU_V12	035	PV72040	Control valve		
P 72005	LIN TANK B72001 BLOW OUT	HU_C07	035	PT72005	Transmitter, pressure		
P 72005	LIN TANK B72001 BLOW OUT	HU_V12	035	PV72005	Control valve		
P 72006	LIN TANK B72001	HU_C07	035	PSH72006	Pressure switch		
P 72011	END PRESSURE LIN PUMP P72001	HU_P03	035	PI72011	Pressure gauge		
P 72012	END PRESSURE LIN PUMP P72001	HU_P01	035	PT72012	Transmitter, pressure		
P 73002	REFILL GAN RESERVOIR	HU_P01	038	PT73002	Transmitter, pressure		
P 73005	MP LIN TANK B73001 BLOW OUT	HU_V12	038	PV73005	Control valve		
P 73007	HP-GAN RESERVOIR B73002	HU_P01	038	PT73007	Transmitter, pressure		
P 73009	HP-GAN RESERVOIR B73002	HU_P01	038	PI73009	Pressure gauge		
P 73015	MP LIN TANK B73001	HU_C07	038	PT73015	Transmitter, pressure		
P 73015	MP LIN TANK B73001	HU_V12	038	PV73015	Control valve		
P 73050	GAN BEHIND WATER BATH VAPORIZER	HU_P01	039	PT73050	Transmitter, pressure		
P 73080	STEAM TO WATER BATH VAPORIZER GAN	HU_P02 heated	039	PT730180	Transmitter, pressure		
P 73081	STEAM TO WATER BATH VAPORIZER GAN	HU_P03	039	PI73081	Pressure gauge		
P 73101	LIN TO P73101	HU_P03	037	PI73101	Pressure gauge		
P 73150	END PRESSURE LIN PUMP P73101	HU_P01	037	PT73150	Transmitter, pressure		
P 73150	END PRESSURE LIN PUMP P73101	HU_V12	037	HV73170	Control valve		

2	17.03.05	Möller	JE	updated					
1	04.01.05	Möller	JE	updated					
0	01.12.04	Möller	JE	Initial Version					
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Air Liquide AGS GmbH


Hook – Up

Allocation Table

TANKFARM**HU_LIST**

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TAG-NO.	DESIGNATION	HOOK-UP	PI-SHT.	1_DEV_TAG	1_DEV_KIND	2_DEV_TAG	2_DEV_KIND		
P 73158	GAN BEHIND W73101	HU_P01	040	PT73158	Transmitter, pressure				
P 73158	GAN BEHIND W73101	HU_V22	040	PV73101	Control valve				
P 73201	LIN TO P73201	HU_P03	037	PI73201	Pressure gauge				
P 73250	END PRESSURE LIN PUMP P73201	HU_P01	037	PT73250	Transmitter, pressure				
P 73250	END PRESSURE LIN PUMP P73201	HU_V12	037	HV73270	Control valve				
P 74090	OUTLET PRESSURE HP-GAN	HU_P01	036	PT74090	Transmitter, pressure				
P 74101	LIN TO P74101	HU_P03	036	PI74101	Pressure gauge				
P 74150	END PRESSURE LIN PUMP P74101	HU_P01	036	PT74150	Transmitter, pressure				
P 74150	END PRESSURE LIN PUMP P74101	HU_V12	036	HV74170	Control valve				
P 74201	LIN TO P74201	HU_P03	036	PI74201	Pressure gauge				
P 74250	END PRESSURE LIN PUMP P74201	HU_P01	036	PT74250	Transmitter, pressure				
P 74250	END PRESSURE LIN PUMP P74201	HU_V12	036	HV74270	Control valve				
P 81010	PURGE GAS	HU_P01	025	PT81010	Transmitter, pressure				
P 81040	PURGE GAS	HU_V30	025	PV81040	Pressure controller				
P 81041	PURGE GAS	HU_V30	025	PV81041	Pressure controller				
P 82010	INSTRUMENT AIR	HU_P01	025	PT82010	Transmitter, pressure				
P 82020	INSTRUMENT GAS	HU_V30	025	PV82020	Pressure controller				
P 84010	STEAM FROM CUSTOMER	HU_P01	025	PT84010	Transmitter, pressure				
P 87012	BOX PURGE	HU_P01	024	PT87012	Transmitter, pressure				
PD 20015	DIFF.-PRESSURE UK20013	HU_P04	010	PDL20015	diff.-pressure switch				
PD 20016	DIFF.-PRESSURE UK20014	HU_P04	010	PDL20016	diff.-pressure switch				
Q 64051	% O2 IN GOX OUTLET W64001	HU_Q01	034	QT64051	Analyzer % O2				
Q 74090	PPM O2 IN MP GAN	HU_Q01	036	QT74090	Analyzer ppm O2				
T 20003	HP-GAN TO CUSTOMER	HU_T03	010	TE20003	Pt100, temp. sensor				
T 20013	HP-GOX TO CUSTOMER	HU_T03	010	TE20013	Pt100, temp. sensor				
T 62022	OVERFLOW PIPE LOX TANK B62001	HU_T01	032	TE62022	Pt100, temp. sensor				
T 64031	WATER BATH VAPORIZER GOX	HU_T01	034	TE64031	Pt100, temp. sensor				
T 64031	WATER BATH VAPORIZER GOX	HU_V22	034	TV64181	Control valve				
T 64032	WATER BATH VAPORIZER GOX	HU_T01	034	TE64032	Pt100, temp. sensor				
T 64050	GOX BEHIND WATER BAD VAPORIZER	HU_T07	034	TE64050	Pt100, temp. sensor				
T 64051	GOX BEHIND WATER BAD VAPORIZER	HU_T07	034	TE64051	Pt100, temp. sensor				
2	17.03.05	Möller	JE	updated					
1	04.01.05	Möller	JE	updated					
0	01.12.04	Möller	JE	Initial Version					
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment

 AIR LIQUIDE Air Liquide AGS GmbH		Hook – Up Allocation Table TANKFARM				HU_LIST Page 5 of 5	
TAG-NO.	DESIGNATION	HOOK-UP	PI-SHT.	1_DEV_TAG	1_DEV_KIND	2_DEV_TAG	2_DEV_KIND
T 70041	MP-GAN TO CUSTOMER	HU_T03	020	TE70041	Pt100, temp. sensor		
T 72022	OVERFLOW PIPE LIN TANK B72001	HU_T01	035	TE72022	Pt100, temp. sensor		
T 73005	OVERFLOW MP LIN TANK BL73001	HU_T01	038	TE73005	Pt100, temp. sensor		
T 73031	WATER BATH VAPORIZER GAN	HU_T01	039	TE73031	Pt100, temp. sensor		
T 73031	WATER BATH VAPORIZER GAN	HU_V22	039	TV73081	Control valve		
T 73032	WATER BATH VAPORIZER GAN	HU_T01	039	TE73032	Pt100, temp. sensor		
T 73051	GAN BEHIND WATER BATH VAPORIZER	HU_T07	039	TE73051	Pt100, temp. sensor		
T 73057	GAN BEHIND WATER BATH VAPORIZER	HU_T07	039	TE73057	Pt100, temp. sensor		
T 74090	GAN BEHIND AIR EVAPORATORS	HU_T01	036	TE74090	Pt100, temp. sensor		
T 74095	GAN BEHIND AIR EVAPORATORS	HU_T01	036	TE74095	Pt100, temp. sensor		
T 84010	STEAM FROM CUSTOMER	HU_T03	010	TE84010	Pt100, temp. sensor		
U 20013	HP-GOX TO CUSTOMER	HU_V20	010	UK20013	Butterfly valve		
U 20014	HP-GOX TO CUSTOMER	HU_V20	010	UK20014	Butterfly valve		
U 64010	LOX SUPPLY W64001	HU_V22	034	UV64010	Control valve		
U 73002	REFILL GAN RESERVOIR	HU_V12	038	PV73002	Globe valve		
U 73010	LIN SUPPLY W73101	HU_V22	039	UV73010	Control valve		
U 73016	MP-LIN TRIP	HU_V12	038	PV73016	Globe valve		
U 73111	LIN TO WATER BATH NAT. GAS VAP.	HU_V10	040	UV 73111	Globe valve		
U 74090	OUTLET MP-GAN	HU_V22	036	UV74090	Control valve		

2	17.03.05	Möller	JE	updated					
1	04.01.05	Möller	JE	updated					
0	01.12.04	Möller	JE	Initial Version					
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment



AIR LIQUIDE

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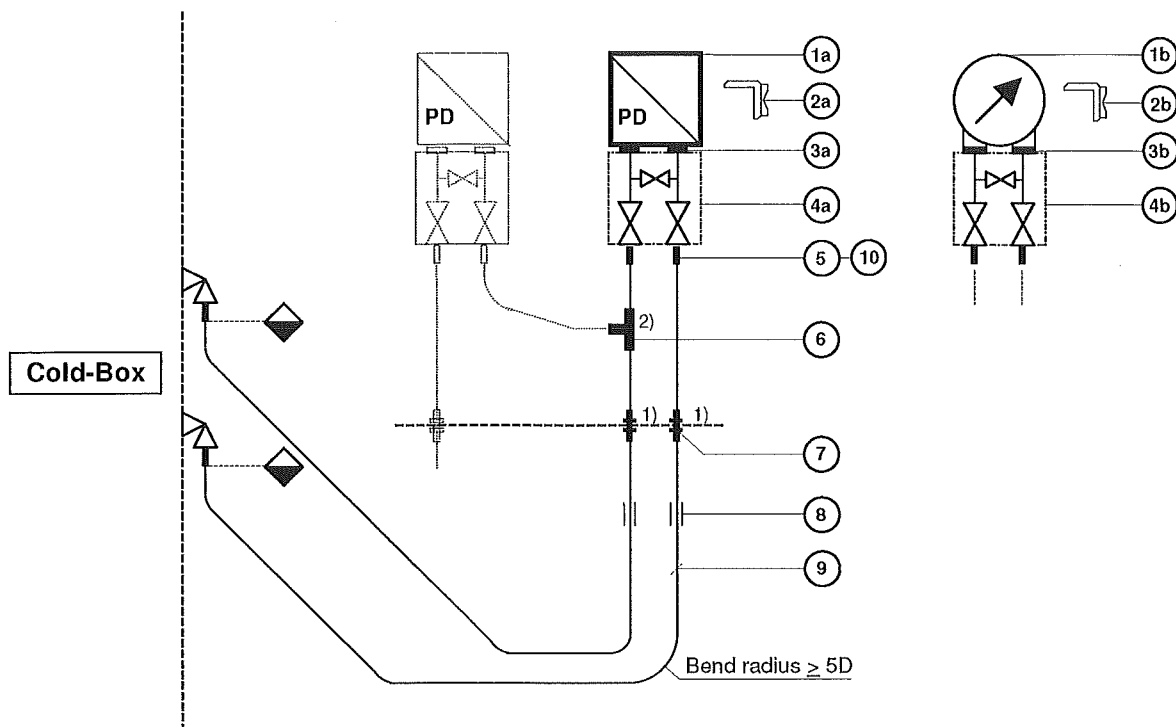
Hook - Up

Comb. measurement, level/ flow/ ΔP -Cold-Box

cryogenic gases
up to 64 bar; max. operating temp. +80 °C

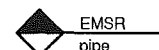
HU_C03
SS, ISO

All components in contact with measured medium have to be oil- and grease-free!



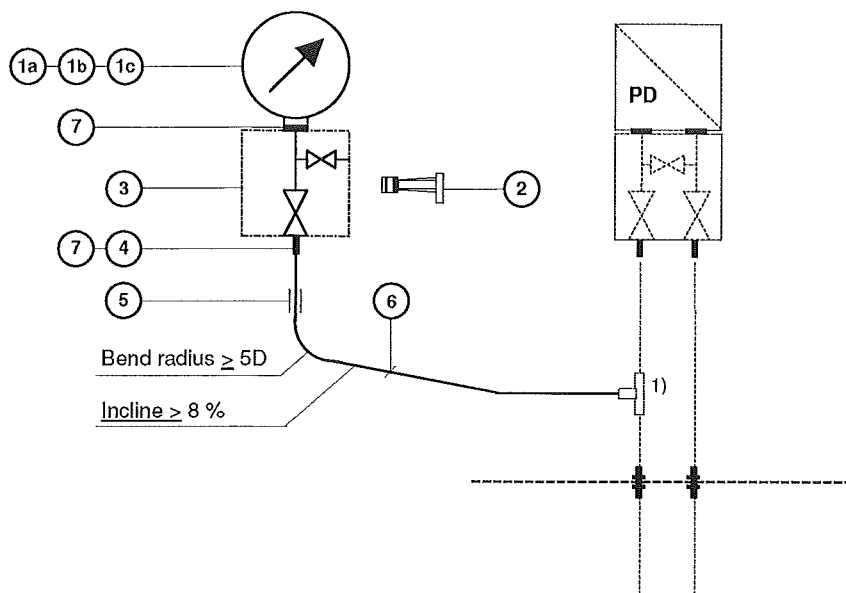
1) only if installed in transmitter protection case

2) difference pressure connection in accordance with P&I diagram

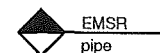


Item	Name				Material	Quantity	Specification		
1 a	Diff. press. transmitter					1	see "Pressure transmitter"		
2a	Mounting bracket					1	see "3 way valve "		
3a	Mounting kit (2 O-rings, 4 screws)					1	see "3 way valve "		
4a	3 way valve for transmitter					1	see "3 way valve "		
1b	Diff. press. gauge					1	see "Press. gauge"		
2b	Mounting bracket					1	see "3 way valve"		
3b	Gasket, C 6.2 x 17.5 - 2., grooved				Cu	2	DIN 16258		
4b	3 way valve for diff. press. gauge					1	see "3 way valve"		
5	G 3/8A male connector for Ø 6 mm tube				316 SS	2	in accordance with tender invitation		
6	T-union for Ø 6 mm tube				316 SS	1	in accordance with tender invitation		
7	bulkhead union				316 SS	2	in accordance with tender invitation		
8	Tube clamps					as required	in accordance with tender invitation		
9	Tube, Ø 6 x 1mm				316 Ti		in accordance with tender invitation		
10	Gasket, A 17 x 23				Cu	2	DIN 7603		
4	14.04.00	Möller		Dwg.-No.	5	09.12.04	Möller	Eic.	Revision
2	14.01.98	Möller	Jün.	Revision	3	06.08.98	Möller	Jün.	stainl. steel
0	16.12.97	Möller	Jün.	Initial version	1	08.01.98	Möller	Jün.	Revision
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment

All components in contact with measured medium have to be oil- and grease-free !



1) difference pressure connection in accordance with P&I diagram



Item	Name				Material	Quantity	Specification			
1a	Pressure transmitter, connection G 1/2A					1	see "Pressure transmitter"			
1b	Press. gauge, connection G 1/2A					1	see "Press. gauge"			
1c	Pressure switch, connection G 1/2A					1	see "Pressure switch"			
2	Instrument support / wall- or tube mounting attachment					1	see "Press. gauge shut-off valve"			
3	Double shut-off valve for press. gauge					1	see "Press. gauge shut-off valve"			
4	G 1/2 female connector for Ø 6 mm tube				316 SS	1	in accordance with tender invitation			
5	Tube clamp					as required	in accordance with tender invitation			
6	Tube, Ø 6 x 1mm				316 Ti		in accordance with tender invitation			
7	Gasket, C 6.2 x 17.5 - 2., grooved				Cu	4	DIN 16258			
4	09.12.04	Möller	Eic.	Revision						
2	14.04.00	Möller		Dwg.-No.	3	09.12.04	Möller	Eic.	Revision	
0	14.01.98	Möller	Jün.	Initial version	1	06.08.98	Möller	Jün.	stainl. steel	
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment	



AIR LIQUIDE

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Hook - Up

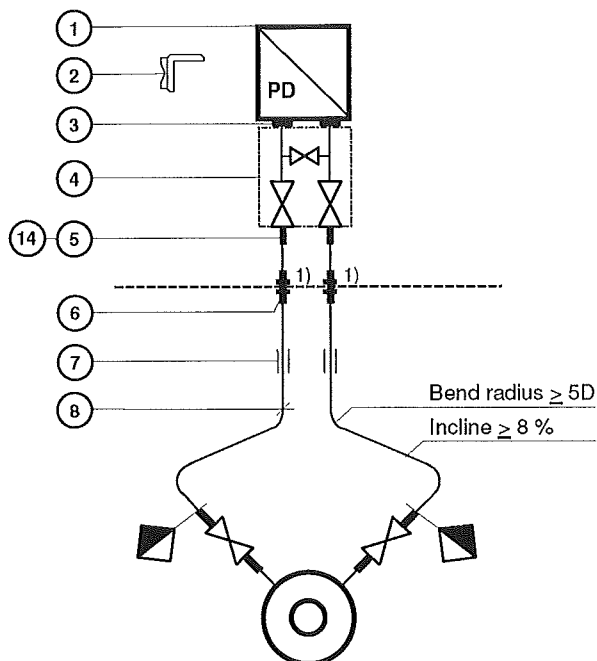
Flow meas. with diff. press. transmitters

Neutral, dry gases
up to 64 bar; max. operating temp. +80 °C

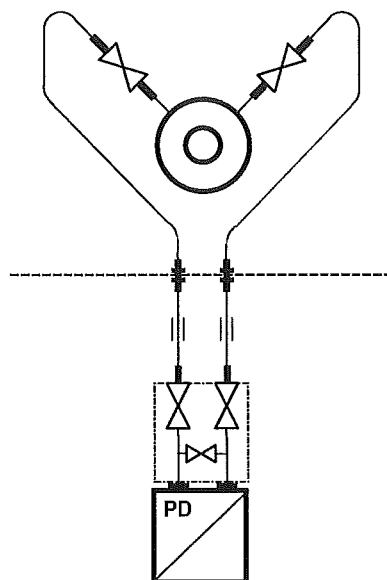
HU_F01
SS, ISO

All components in contact with measured medium have to be oil- and grease-free !

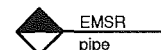
preferred configuration:



alternative configuration:



1) only if installed in transmitter protection case



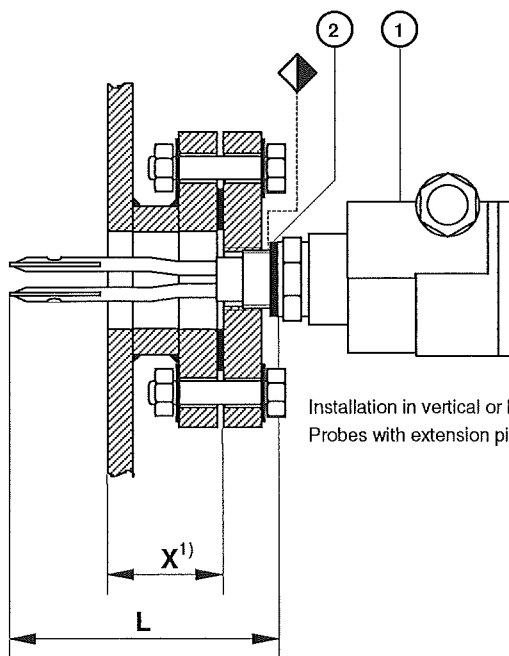
Item	Name				Material	Quantity	Specification			
1	Diff. press. transmitter					1	see "Pressure transmitter"			
2	Mounting bracket					1	see "3 way valve"			
3	Mounting kit (2 O-rings, 4 screws)					1	see "3 way valve"			
4	3 way valve					1	see "3 way valve"			
5	G 3/8A male connector for Ø 6 mm tube				316 SS	2	in accordance with tender invitation			
6	bulkhead union for Ø 6 mm tube				316 SS	2	in accordance with tender invitation			
7	Tube clamps					as required	in accordance with tender invitation			
8	Tube, Ø 6 x 1mm				316 Ti		in accordance with tender invitation			
4	14.04.00	Möller		Dwg.-No.	5	30.11.04	Möller	Jün.	Revision	
6	18.01.05	Möller	Jün.	Revision	3	06.08.98	Möller	Jün.	stainl. steel	
0	18.11.97	Möller	Jün.	Initial version	1	15.12.97	Möller	Jün.	Überarbeitung	
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment	

**AIR LIQUIDE**

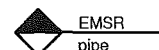
Air Liquide AGS GmbH

Hook - Up

Vibration probe without slide coupling

neutral liquids
up to 40 bar; max. operating temp. +100°C**HU_L05**
SS, ISO**All components in contact with measured medium have to be oil- and grease- free !**Installation in vertical or horizontal position,
Probes with extension pipe in vertical position only!

1) Dimension "X" max. 60 mm for use in viscous medium or medium with a tendency to form deposits, otherwise any dimension possible



Item	Name				Material	Quantity	Specification		
1	Vibration probe with connection thread G 1A					1	see "Vibration probe"		
2	Flat gasket ring, A 33 x 39				Cu	1	DIN 7603		



AIR LIQUIDE

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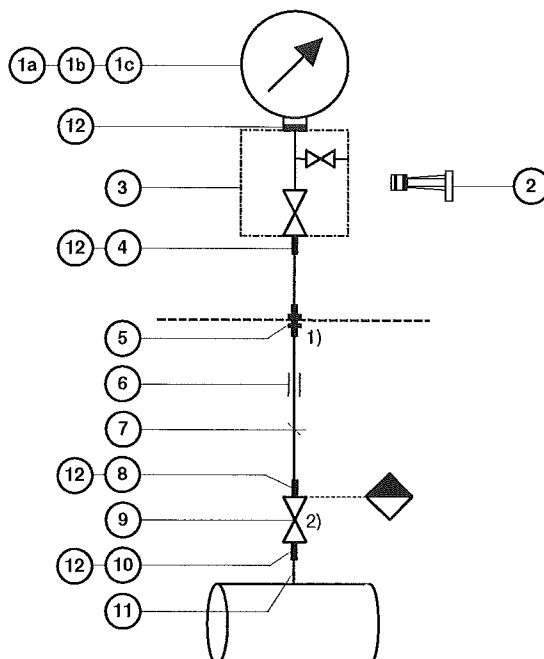
Hook - Up

Pressure meas. with press. gauge/transmitter

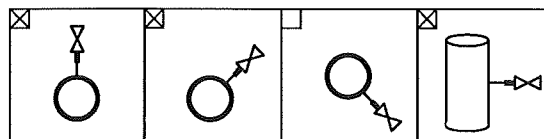
neutral gases
up to 64 bar; max. operating temp. +80°C

HU_P01
SS, ISO

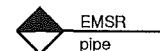
All components in contact with measured medium have to be oil- and grease-free !



preferred nozzle configuration:



- 1) only if installed in transmitter protection case
2) valve spindle to be installed in horizontal position



Item	Name				Material	Quantity	Specification			
1a	Pressure transmitter, connection G 1/2A					1	see "Pressure transmitter"			
1b	Press. gauge, connection G 1/2A					1	see "Press. gauge"			
1c	Pressure switch, connection G 1/2A					1	see "Pressure switch"			
2	Instrument support / wall-or tube mounting attachment					1	see "Press. gauge shut-off valve"			
3	Double shut-off valve for press. gauge					1	see "Press. gauge shut-off valve"			
4	G 1/2 female connector for Ø 6 mm tube				316 SS	1	in accordance with tender invitation			
5	bulkhead union for Ø 6 mm tube				316 SS	1	in accordance with tender invitation			
6	Tube clamps					as required	in accordance with tender invitation			
7	Tube, Ø 6 x 1mm				316 Ti		in accordance with tender invitation			
8	G 1/2A male gauge connector for Ø 6 mm tube				316 SS	1	in accordance with tender invitation			
9	Primary shut-off valve G 1/2 with female gauge connector				316 Ti	1				
10	G 1/2 female gauge connector				316 Ti	1				
11	Welding nozzle				316 Ti	1				
12	Gasket C 6.2 x 17.5 - 2., grooved				Cu	4	DIN 16258			
4	14.04.00	Möller		Dwg.-No.	5	09.12.04	Möller	Eic.	Revision	
2	08.01.98	Möller	Jün.	Revision	3	06.08.98	Möller	Jün.	stainl. steel	
0	18.11.97	Möller	Jün.	Initial version	1	15.12.97	Möller	Jün.	Revision	
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment	



AIR LIQUIDE

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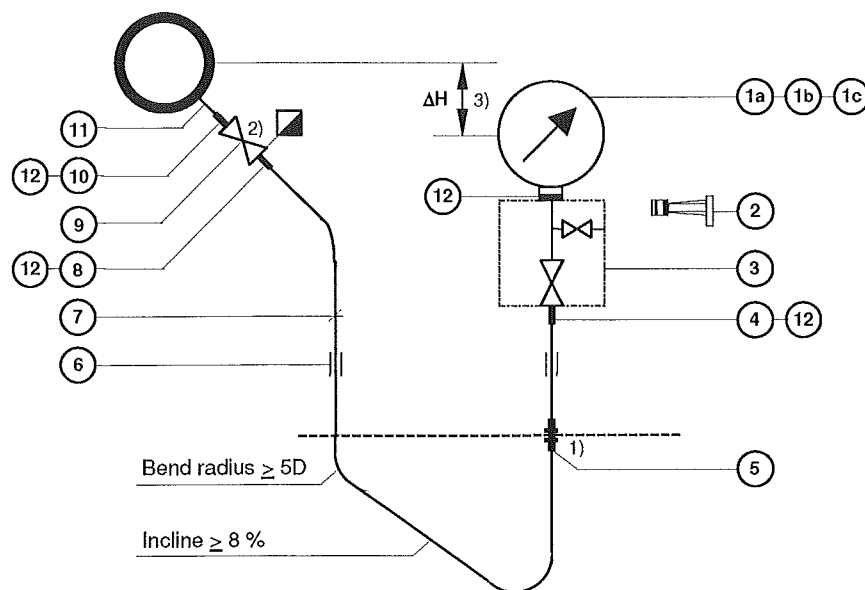
Hook - Up

Pressure meas. with press. gauge / transmitter

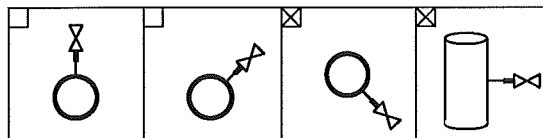
neutral liquids
up to 64 bar; max. operating temp. +80°C

HU_P02
SS, ISO

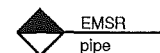
All components in contact with measured medium have to be oil- and grease-free !



preferred nozzle configuration:



- 1) only if installed in transmitter protection case
- 2) valve spindle to be installed in horizontal position
- 3) if installed underneath the tube height diff. has to be considered



Item	Name				Material	Quantity	Specification		
1a	Pressure transmitter, connection G 1/2A					1	see "Pressure transmitter"		
1b	Press. gauge, connection G 1/2A					1	see "Press. gauge"		
1c	Pressure switch, connection G 1/2A					1	see "Pressure switch"		
2	Instrument support / wall-or tube mounting attachment					1	see "Press. gauge shut-off valve"		
3	Double shut-off valve for press. gauge					1	see "Press. gauge shut-off valve"		
4	G 1/2 female connector for Ø 6 mm tube				316 SS	1	in accordance with tender invitation		
5	bulkhead union for Ø 6 mm tube				316 SS	1	in accordance with tender invitation		
6	Tube clamps					as required	in accordance with tender invitation		
7	Tube, Ø 6 x 1mm				316 Ti		in accordance with tender invitation		
8	G 1/2A male gauge connector for Ø 6 mm tube				316 SS	1	in accordance with tender invitation		
9	Primary shut-off valve G 1/2 with female gauge connector				316 Ti	1			
10	G 1/2 female gauge connector				316 Ti	1			
11	Welding nozzle				316 Ti	1			
12	Gasket C 6.2 x 17.5 - 2., grooved				Cu	4	DIN 16258		
4	14.04.00	Möller		Dwg.-No.	5	09.12.04	Möller	Eic.	Revision
2	08.01.98	Möller	Jün.	Revision	3	06.08.98	Möller	Jün.	stainl. steel
0	18.11.97	Möller	Jün.	Initial version	1	15.12.97	Möller	Jün.	Revision
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment



AIR LIQUIDE

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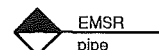
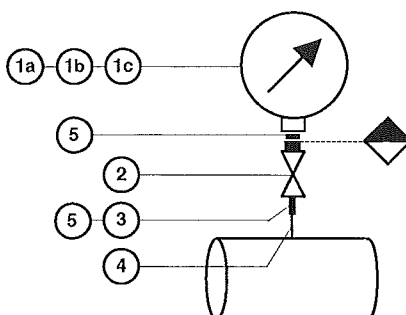
Hook - Up

Press. gauge / transmitter, directly mounted

neutral liquids and gases
up to 200 bar; max. operating temp. +100°C

HU_P03
SS, ISO

All components in contact with measured medium have to be oil- and grease-free !

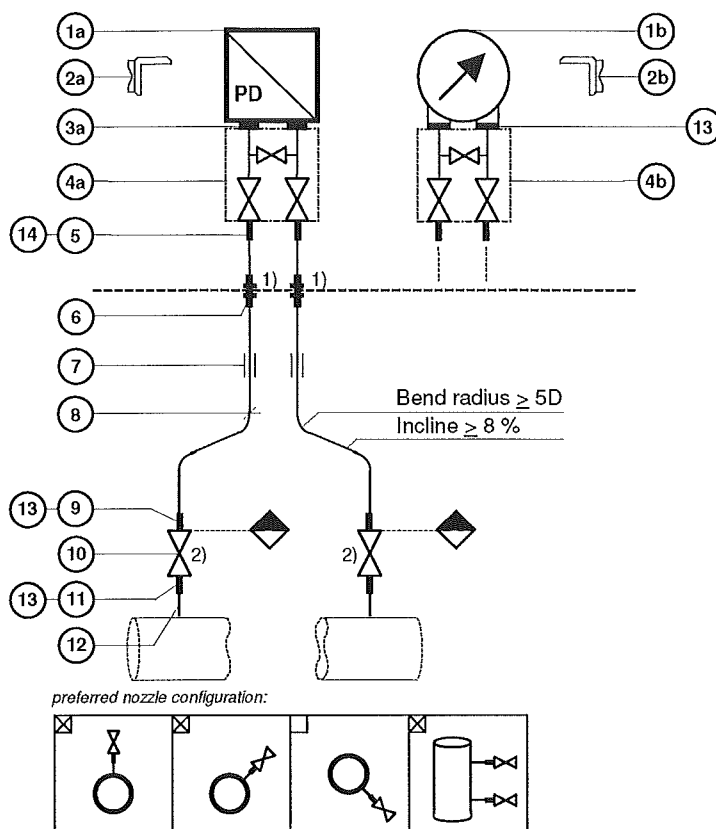


Item	Name				Material	Quantity	Specification			
1a	Pressure transmitter, connection G 1/2A					1	see "Pressure transmitter"			
1b	Press. gauge, connection G 1/2A					1	see "Press. gauge"			
1c	Pressure switch, connection G 1/2A					1	see "Pressure switch"			
2	Primary shut-off valve G 1/2 with female gauge connector				316 Ti	1	in accordance with tender invitation			
3	G 1/2 female gauge connector				316 Ti	1				
4	Welding nozzle				1.4571	1				
5	Gasket, C 6.2 x 17.5 - 2. grooved				Cu	2				
4	14.04.00	Möller		Dwg.-No.						
2	08.01.98	Möller	Jün.	Revision	3	06.08.98	Möller	Jün.	stainl. steel	
0	25.11.97	Möller	Jün.	Initial version	1	15.12.97	Möller	Jün.	Revision	
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment	

**AIR LIQUIDE**

Air Liquide AGS GmbH

Hook - Up

 ΔP -meas. with press. gauge / transmitterneutral gases
up to 64 bar; max. operating temp. +80 °C**HU_P04**
SS, ISO**All components in contact with measured medium have to be oil- and grease-free !**

- 1) only if installed in transmitter protection case
2) valve spindle to be installed in horizontal position



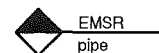
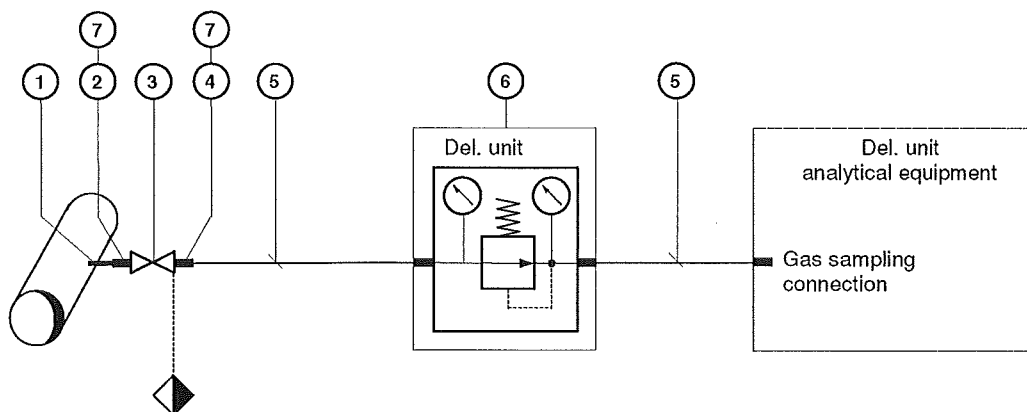
Item	Name				Material	Quantity	Specification			
1 a	Diff. press. transmitter					1	see "Pressure transmitter"			
2 a	Mounting bracket					1	see "3 way valve"			
3 a	Mounting kit (2 O-rings, 4 screws)					1	see "3 way valve"			
4 a	3 way valve for transmitter					1	see "3 way valve"			
1 b	Diff. press. gauge					1	see "Press. gauge"			
2 b	Mounting bracket					1	see "3 way valve"			
4 b	3 way valve for diff. press. gauge					1	see "3 way valve"			
5	G 3/8A male connector for \varnothing 6 mm tube				316 SS	2	in accordance with tender invitation			
6	bulkhead union for \varnothing 6 mm tube				316 SS	1	in accordance with tender invitation			
7	Tube clamps					as required	in accordance with tender invitation			
8	Tube, \varnothing 6 x 1 mm				316 Ti		in accordance with tender invitation			
9	G 1/2A male gauge connector for \varnothing 6 mm tube				316 SS	2	in accordance with tender invitation			
10	Primary shut-off valve G 1/2 with female gauge connector				316 Ti	2				
11	G 1/2 female gauge connector				316 Ti	2				
12	Welding nozzle				316 Ti	2				
13	Gasket, C 6.2 x 17.5 - 2., grooved				Cu	a) 4b) 6	DIN 16258			
14	Gasket, A 17 x 23				Cu	2	DIN 7603			
4	14.04.00	Möller		Dwg.-No.	5	09.12.04	Möller	Eic.	Revision	
2	08.01.98	Möller	Jün.	Revision	3	06.08.98	Möller	Jün.	stainl. steel	
0	25.11.97	Möller	Jün.	Initial version	1	15.12.97	Möller	Jün.	Revision	
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment	

**AIR LIQUIDE**

Air Liquide AGS GmbH

Hook - Up

Gas sample point

neutral gases
up to 64 bar; max. operating temp. +80°C**HU_Q01**
SS, ISO**All components in contact with measured medium have to be oil- and grease-free!**

Item	Name				Material	Quantity	Specification		
1	Welding nozzle				316 Ti	1			
2	G 1/2 female gauge connector				316 Ti	1			
3	Primary shut-off valve G 1/2 with female gauge connector				316 Ti	1			
4	G 1/2Amale gauge connector for Ø 6 mm tube				316 SS	1	in accordance with tender invitation		
5	Tube, Ø 6 x 1mm				316 Ti				
6	Pressure reducing station				316 L	1	see specification		
7	Gasket, C 6.2 x 17.5 - 2., grooved				Cu	2	DIN 16258		
4	14.04.00	Möller		Dwg.-No.	5	09.12.04	Möller	Eic.	Revision
2	27.08.98	Möller	Jün.	Revision	3	19.07.99	Möller	Jün.	Revision
0	06.03.98	Möller	Jün.	Initial version	1	12.03.98	Möller	Jün.	Material-no.
Rev.	Date	Name	Verified	Amendment	Rev.	Date	Name	Verified	Amendment



AIR LIQUIDE

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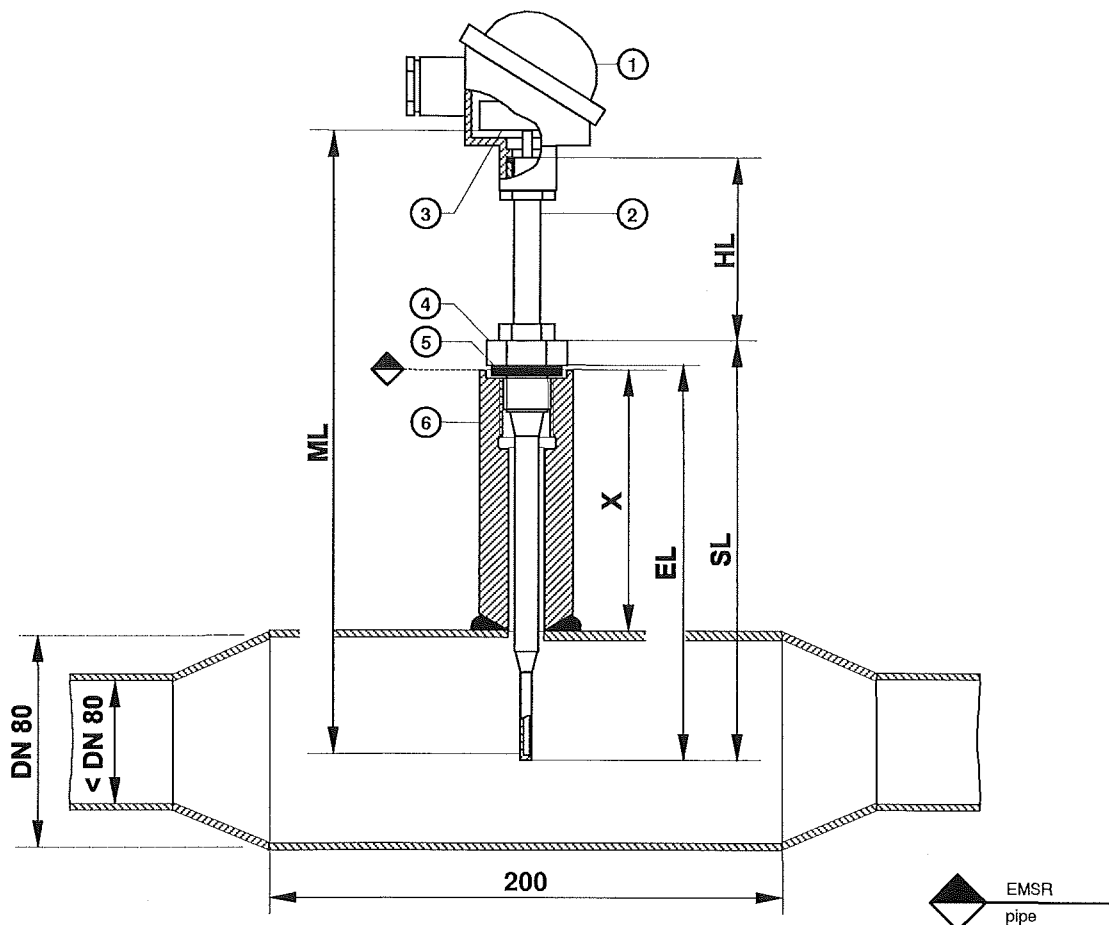
Hook - Up

Temp. measurement with resistance thermometer

Piping < DN 80 / PN 64, up to +300 °C

HU_T01
SS, ISO

All components in contact with measured medium have to be oil- and grease-free
(not suitable for H₂ und He!)



Item	Name				Material	Quantity	Specification		
1	Connection head				Light metal	1	see "Resistance thermometer"		
2	Neck pipe				316 Ti	1	see "Resistance thermometer"		
3	Measuring element				321	1	see "Resistance thermometer"		
4	Thermo well, EL = 160 mm				316 Ti	1	see "Resistance thermometer"		
5	Flat gasket, 21 x 26 x 1.5 mm				Cu	1	similar to DIN 7603 type C		
6	Welding nozzle, X = 100 mm					1	similar to DIN 43 763 type B		

**AIR LIQUIDE**

Air Liquide AGS GmbH

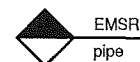
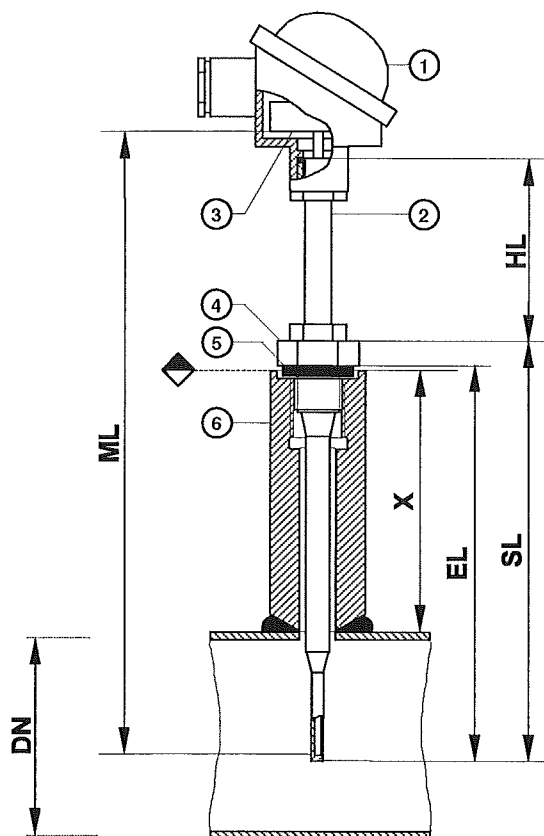
Hook - Up

Temp. measurement with resistance thermometer

Piping >= DN 200 / PN 64, up to +300 °C

HU_T03
SS, ISO

All components in contact with measured medium have to be oil- and grease-free !
(not suitable for H₂ und He!)



Item	Name				Material	Quantity	Specification		
1	Connection head				Light metal	1	see "Resistance thermometer"		
2	Neck pipe				316 Ti	1	see "Resistance thermometer"		
3	Measuring element				321	1	see "Resistance thermometer"		
4	Thermo well, EL = 250 mm				316 Ti	1	see "Resistance thermometer"		
5	Flat gasket, 21 x 26 x 1.5 mm				Cu	1	similar to DIN 7603 type C		
6	Welding nozzle, X = 100 mm					1	similar to DIN 43 763 type B		

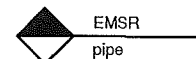
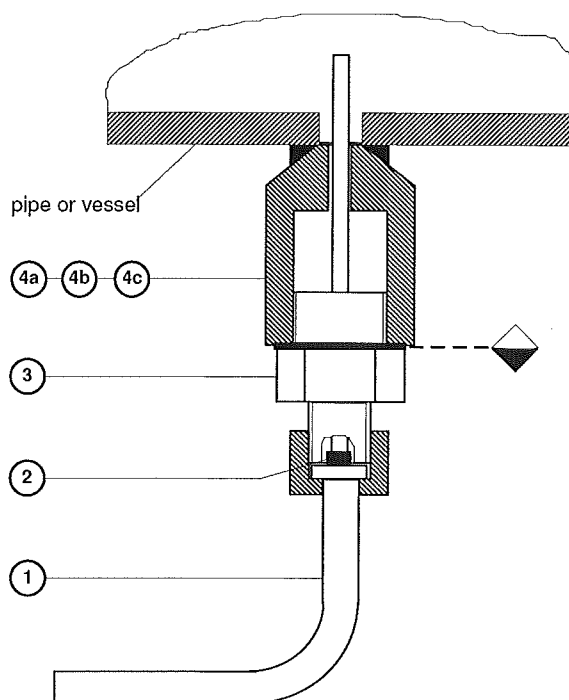
**AIR LIQUIDE**

Air Liquide AGS GmbH

Hook - Up

Resistance thermometer for safety tripsCryogenic gases
up to 40 bar; operating temp. -200 ... +20 °C**HU_T07
SS, ISO**

All components in contact with measured medium have to be oil- and grease-free !
(not suitable for H₂ und He!)



Item	Name				Material	Quantity	Specification			
1	Resistance thermometer				316 Ti	1	AL-item-no.: 0.456.003			
2	Sealing				PTFE	1	AL-item-no.: 794.19314			
3	Self sealing sensor lock with copper-gasket				brass	1	AL-item-no.: 792.79478			
4a	Welding nozzle for pipes up to DN 25				316 Ti	1	AL-item-no.: 792.79688			
4b	Welding nozzle for pipes up to DN 50				316 Ti	1	AL-item-no.: 770.30598			
4c	Welding nozzle for pipes DN 65 and exceed				316 Ti	1	AL-item-no.: 770.30599			

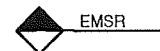
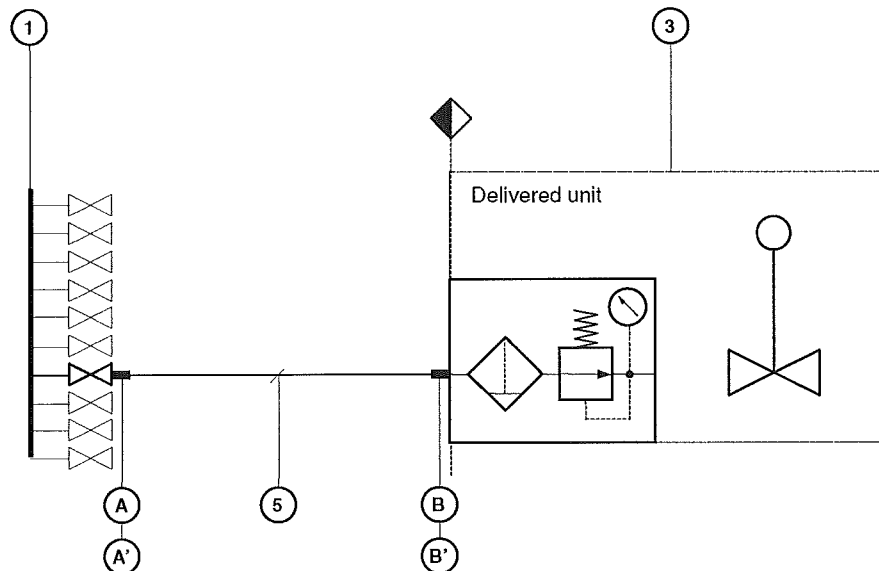
Hook - Up

Pneumatic connection for actuators

 Actuator completely assembled and tubed,
connection G1/4 A, Ø6 mm tube

HU_V10

SS, ISO



Item	Name				Material	Quantity	Specification		
1	Pneumatic sub-distributor						see "Instument Air Distributer"		
3	Actuator with attached components					1	see "Actuators"		
5	Tube, Ø 6mm						in accordance with tender invitation		
A,B	G 1/4A male connector for Ø 6 mm tube				316 SS	2	in accordance with tender invitation		
A,B'	Gasket, A 14 x 18				Cu	2	DIN 7603		

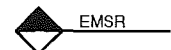
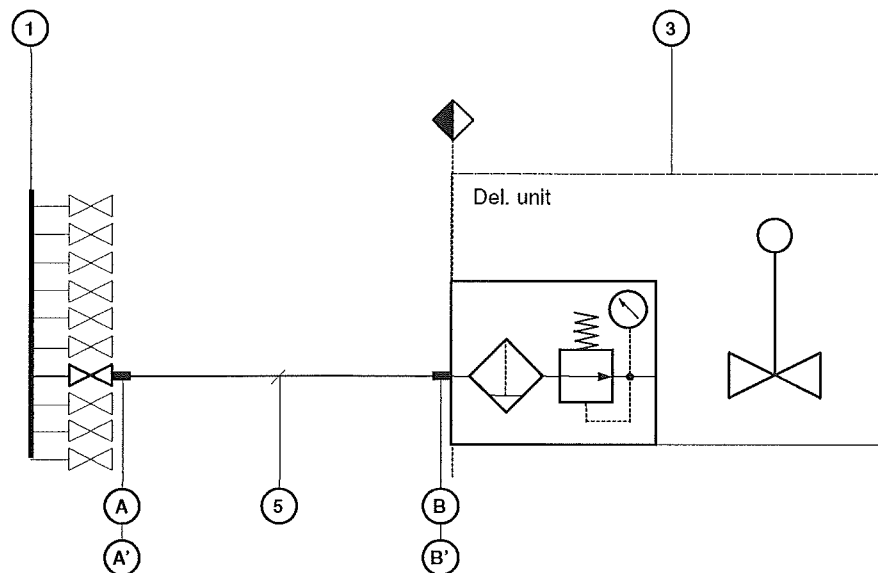
Hook - Up

Pneumatic connection for actuators

 Actuator completely assembled and tubed,
connection G1/4 A, Ø12 mm tube

HU_V20

SS, ISO



Item	Name				Material	Quantity	Specification			
1	Pneumatic sub-distributor						see "Instument Air Distributer"			
3	Actuator with attached components					1	see "Actuators"			
5	Tube, Ø 12 mm						in accordance with tender invitation			
A,B	G 1/4A male connector for Ø 12 mm tube				316 SS	2	in accordance with tender invitation			
A',B'	Gasket, A 14 x 18				Cu	2	DIN 7603			

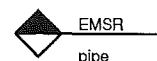
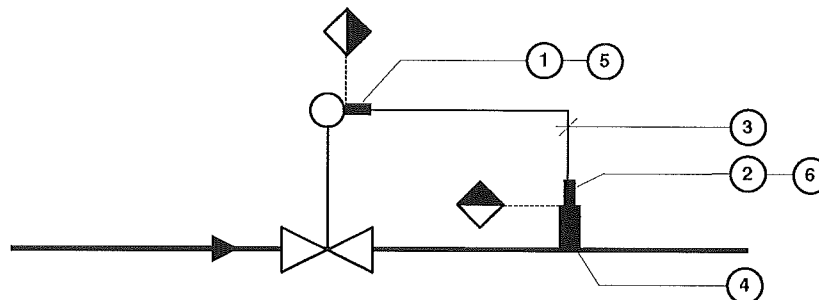
Hook - Up

Pressure regulator with control line

 Regulator with control line connection G1/4",
 Ø12 mm tube

HU_V30

SS, ISO



Item	Name				Material	Quantity	Specification			
1	G1/4" male connector for Ø12 mm tube				316 SS	1	in accordance with tender invitation			
2	G1/2" male connector for Ø12 mm tube				316 SS	1	in accordance with tender invitation			
3	Tube, Ø12 mm				316 SS		in accordance with tender invitation			
4	Welding nozzle with bushing nut				316 SS	1				
5	Gasket, A 14 x 18				Cu	1	DIN 7603			
6	Gasket, A 21 x 26				Cu	1	DIN 7603			