

INSTRUMENT LIST AND SPECIFICATION

MODIFIED STARCH DRYING PROJECT – AGRANA – ROMANIA

PROJECT No.: 5204 Date :13.02.2026

REFER P&ID No.: 5204-PR-DW-0001-02

DOCUMENT No: 5204-IN-SP-0001-00

ITEM No.	TAG No.	QUANTITY	FUNCTION	LOCATION	LINE No.	SERVICE 1	SERVICE 2	LINE SIZE	DESCRIPTION	INSTRUMENT TYPE	I/O TYPE	MEDIA	OPERATING		DESIGN		MEDIA PHASE (S/L/G)	PROCESS CONNECTION	THERMOWELL INSERTION	POWER SUPPLY	SIGNAL TYPE	DIAL / CALIBRATE D RANGE	SENSOR / INSTRUMENT RANGE	UNIT	SIGNAL PASSIVE / ACTIVE	SIGNAL		MATERIAL	MANUFACTURER	MODEL No.	CATALOGUE No.	REMARKS
													TEMP. (°C)	PR. (barg)	TEMP. (°C)	PR. (barg)										SOURCE	TO					
1	WT-B6200	4	Instrument	Common Area		Agitated Feed Vessel Weighline System	B6200	--	Weighing Transmitter	Load Cell and Transmitter	AI	Wet Starch Cake	Amb.		Amb.		S	Mounted	--	24 DC	4-20 mA		TBD	kg	ACTIVE	FLD	CR	SS 316L	Mettler Toledo	SWB600	Mettler Toledo IND360 + SWB600-2.2T*4	
2	PT-S101	1	Instrument	Common Area	Steam Header	Steam	--	DN 150	Pressure Transmitter		AI	Steam	189	11	220	16	G	1/2" NPT	--	Loop	4-20 mA	0-16	0-16	barg	PASSIVE	FLD	CR	SS 316L	E + H	PMP518	PMP518-BGBAAB66A33A1V1N1A1	
3	TT-S101	1	Instrument	Common Area	Steam Header	Steam	--	DN 150	Temperature Transmitter	RTD + TX	AI	Steam	189	11	220	16	G	1/2" NPT	Yes	Loop	4-20 mA	0-210	0-220	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8FBBB8B18X1AXAB3AA1AA1+MAMB	
4	FT-S101	1	Instrument	Common Area	Steam Header	Steam	--	DN 150	Flow Transmitter	Vortex Flow Meter	AI	Steam	189	11	220	16	G	Flanged	--	24 DC	4-20 mA	0-1000	0-1200	kg/hr	ACTIVE	FLD	CR	SS 316L	E + H	7F2C1H	7F2C1H-B2ACCAACAAAD25KA1+AA	
5	PG-102	1	Instrument	Common Area	Dryer Duct	Hot Air	--	--	Pressure Gauge	Pressure Gauge	--	Hot Air	160	0-1	200	2	G	Threaded	--	--	Local		0-2	barg	PASSIVE			SS 316L	WIKA	Wika 233.50	233.50.100 M20*1.5Radial Connection 0-2.5bar/Mpa	
6	TT-C101	1	Instrument	Common Area		Condensate	W6501	DN 65	Temperature Transmitter	RTD + TX	AI	Condensate	170-189	8-11	220	16	L	Flanged	Yes	Loop	4-20 mA		0-220	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8FBBB8B18X1AXAB3AA1AA1+MAMB	
7	PG-103	1	Instrument	Common Area	Fan Inlet Duct	Hot Air	--	--	Pressure Gauge	Pressure Gauge	--	Hot Air	50-170	0-1	200	2	G	Threaded	--	--	Local		0-2	barg	PASSIVE			SS 316L	WIKA	Wika 233.50	233.50.100 M20*1.5Radial Connection 0-2.5bar/Mpa	
8	TT-C102	1	Instrument	Common Area		Condensate	W6504-1/2/3	DN 65	Temperature Transmitter	RTD + TX	AI	Condensate	170-189	8-11	220	16	L	Flanged	Yes	Loop	4-20 mA		0-220	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8FBBB8B18X1AXAB3AA1AA1+MAMB	
9	PG-C101	1	Instrument	Common Area		Condensate	W6501	DN 65	Pressure Gauge	Pressure Gauge	--	Condensate	170-189	8-11	220	16	L	Threaded	--	--	Local		0-12	barg	PASSIVE			SS 316L	WIKA	Wika 233.50	233.50.100 M20*1.5Radial Connection 0-16bar/Mpa	
10	TT-C103	1	Instrument	Common Area		Condensate	W6504-4/5/6	DN 65	Temperature Transmitter	RTD + TX	AI	Condensate	170-189	8-11	220	16	L	Flanged	Yes	Loop	4-20 mA		0-220	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8FBBB8B18X1AXAB3AA1AA1+MAMB	
11	PG-C102	1	Instrument	Common Area		Condensate	W6504-1/2/3	DN 65	Pressure Gauge	Pressure Gauge	--	Condensate	170-189	8-11	220	16	L	Threaded	--	--	Local		0-12	barg	PASSIVE			SS 316L	WIKA	Wika 233.50	233.50.100 M20*1.5Radial Connection 0-16bar/Mpa	
12	LT-B6515	1	Instrument	Common Area		Condensate	B6515	--	Level Transmitter	Differential pressure Level Transmitter	AI	Condensate	170-189	8-11	220	16	L	Flanged	--	Loop	4-20 mA		0-H	m	PASSIVE	FLD	CR		E + H	PMD78B	PMD78B-8GBADJHC7FCMHCMEBHSJHSJG2A+VD	
13	PG-C103	1	Instrument	Common Area		Condensate	W6504-4/5/6	DN 65	Pressure Gauge	Pressure Gauge	--	Condensate	170-189	8-11	220	16	L	Threaded	--	--	Local		0-12	barg	PASSIVE			SS 316L	WIKA	Wika 233.50	233.50.100 M20*1.5Radial Connection 0-16bar/Mpa	
14	PG-C104	1	Instrument	Common Area		Condensate	W6501 A	DN 65	Pressure Gauge	Pressure Gauge	--	Condensate	90		200		L	Threaded	--	--	Local		0-10	barg	PASSIVE			SS 316L	WIKA	Wika 233.50	233.50.100 M20*1.5Radial Connection 0-10bar/Mpa	
15	TT-C104	1	Instrument	Common Area		Condensate	W6501 A	DN 65	Temperature Transmitter	RTD + TX	AI	Condensate	90		220		L	Flanged	Yes	Loop	4-20 mA		0-220	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8FBBB8B18X1AXAB3AA1AA1+MAMB	
16	PG-P6501	1	Instrument	Common Area		Condensate	P6501	DN 40	Pressure Gauge	Pressure Gauge	--	Condensate	90		200		L	Threaded	--	--	Local		0-10	barg	PASSIVE			SS 316L	WIKA	Wika 233.50	233.50.100 M20*1.5Radial Connection 0-10bar/Mpa	
17	FT-C101	1	Instrument	Common Area	Condensate Header	Condensate	--	DN 40	Flow Transmitter	Variable Area Flow Meter	AI	Condensate	90		200		L	Flanged	--	Loop	4-20 mA		Vendor	m³/hr	ACTIVE	FLD	CR	SS 316L	Krohne	H250 M40	H250/RR/M40/ESK	
18	PG-S101	1	Instrument	Common Area		Steam	--	DN 125	Pressure Gauge	Pressure Gauge	--	Steam	189	11	220	16	G	Threaded	--	--	Local		0-12	barg	PASSIVE			SS 316L	WIKA	Wika 233.50	233.50.100 M20*1.5Radial Connection 0-16bar/Mpa	
19	TT-A102	1	Instrument	Common Area	Air Heater	Hot Air	--	--	Temperature Transmitter	RTD + TX	AI	Hot Air	50-160	0.5-1	200	2	G	Threaded	--	Loop	4-20 mA		0-200	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8FBBB8B18X1AXAB3AA1AA1+MAMB	
20	PT-A101	1	Instrument	Common Area	Air Heater	Hot Air	--	--	Pressure Transmitter	Pressure TX	AI	Hot Air	50-160	0.5-1	200	2	G	1/2" NPT	--	Loop	4-20 mA		0-2	barg	PASSIVE	FLD	CR		E + H	PMP518	PMP518-BGBAAB66A33A1V1N1A1	
21	PT-A102	1	Instrument	Common Area	Air Heater	Hot Air	--	--	Pressure Transmitter	Pressure TX	AI	Hot Air	50-160	0.5-1	200	2	G	1/2" NPT	--	Loop	4-20 mA		0-2	barg	PASSIVE	FLD	CR		E + H	PMP518	PMP518-BGBAAB66A33A1V1N1A1	
22	TG-101	1	Instrument	Common Area	Dryer Duct	Hot Air	--	--	Temperature Gauge	Temperature Gauge	--	Hot Air	170	0.5-1	220	2	G	Mounted	Yes	--	Local	0-200	0-200	°C	PASSIVE			SS 316L	WIKA	Bimetal	Bimetal 0-200°C	
23	TG-102	1	Instrument	Common Area	Dryer Duct	Hot Air	--	--	Temperature Gauge	Temperature Gauge	--	Hot Air	160	0-1	200	2	G	Mounted	Yes	--	Local		0-200	°C	PASSIVE			SS 316L	WIKA	Bimetal	Bimetal 0-200°C	
24	TT-101	1	Instrument	Common Area	Dryer Duct	Hot Air	--	--	Temperature Transmitter	RTD + TX	AI	Hot Air	170	0.5-1	220	2	G	Threaded	Yes	Loop	4-20 mA		0-200	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8FBBB8B18X1AXAB3AA1AA1+MAMB	
25	TG-103	1	Instrument	Common Area	Fan Inlet Duct	Hot Air	--	--	Temperature Gauge	Temperature Gauge	--	Hot Air	50-170		200		G	Mounted	Yes	--	Local		0-200	°C	PASSIVE			SS 316L	WIKA	Bimetal	Bimetal 0-200°C	
26	TG-A101	1	Instrument	Common Area	Air Heater	Ambient Air	--	--	Temperature Gauge	Temperature Gauge	--	Air	-30/+50	0-1	-40/+60	--	G	Mounted	--	--	Local	-30/+50		°C	PASSIVE			SS 316L	WIKA	Bimetal	Bimetal 0-200°C	
27	TT-102	1	Instrument	Common Area	Dryer Duct	Hot Air	--	--	Temperature Transmitter	RTD + TX	AI	Hot Air	160	0-1	200	2	G	Threaded	Yes	Loop	4-20 mA		0-200	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8FBBB8B18X1AXAB3AA1AA1+MAMB	
28	TG-A102	1	Instrument	Common Area	Air Heater	Hot Air	--	--	Temperature Gauge	Temperature Gauge	--	Hot Air	160	0.5-1	200	2	G	Mounted	Yes	--	Local		0-200	°C	PASSIVE			SS 316L	WIKA	Bimetal	Bimetal 0-200°C	
29	PT-102	1	Instrument	Common Area	Dryer Duct	Hot Air	--	--	Pressure Transmitter	Pressure TX	AI	Hot Air	160	0-1	200	2	G	1/2" NPT	--	Loop	4-20 mA		0-2	barg	PASSIVE	FLD	CR		E + H	PMP518	PMP518-BGBAAB66A33A1V1N1A1	
30	GS-101	1	Inspection Door Position	Common Area	Inspection Door Position	Air Heater	--	--	Proximity Switch	Position Sensor	DI	Air	160	0-1	200	2	G	Mounted		24 VDC	PNP		On/Off	--	ACTIVE	FLD	CR	Thermoplastic enclosure	IFM	IMC4030	IMC4030-CPKG/US/3D/3G	
31	GS-102	1	Inspection Door Position	Common Area	Inspection Door Position	Air Heater	--	--	Proximity Switch	Position Sensor	DI	Air	160	0-1	200	2	G	Mounted		24 VDC	PNP		On/Off	--	ACTIVE	FLD	CR	Thermoplastic enclosure	IFM	IMC4030	IMC4030-CPKG/US/3D/3G	
32	GS-103	1	Inspection Door Position	Common Area	Inspection Door Position	Air Heater	--	--	Proximity Switch	Position Sensor	DI	Dust	160	0-1	200	2	S	Mounted		24 VDC	PNP		On/Off	--	ACTIVE	FLD	CR	Thermoplastic enclosure	IFM	IMC4030	IMC4030-CPKG/US/3D/3G	
33	GS-104	1	Inspection Door Position	Common Area	Inspection Door Position	Air Heater	--	--	Proximity Switch	Position Sensor	DI	Dust	160	0-1	200	2																

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													TEMP. (°C)	PR. (barg)	TEMP. (°C)	PR. (barg)										SOURCE	TO					
66	TT-103	1	Instrument	Common Area	Fan Inlet Duct	Hot Air	–	–	Temperature Transmitter	RTD + TX	AI	Hot Air	50-170	0-1	200	2	G	Threaded	Yes	Loop	4–20 mA		0 - 200	°C	PASSIVE	FLD	CR	SS 316L	E + H	TM131	TM131-8F88B818X1AXAB3AA1AA1+MAMB	
67	TG-B6515	1	Instrument	Common Area	–	Condensate	B6515	–	Temperature Gauge	Temperature Gauge	–	Condensate	170-189	8-11	220	16	L	Flanged	Yes	–	Local		0–200	°C	PASSIVE			SS 316L	WIKA	Bimetal	Bimetal 0–200°C	
68	PT-103	1	Instrument	Common Area	Fan Inlet Duct	Hot Air	–	–	Pressure Transmitter		AI	Hot Air	50-170	0-1	200	2	G	1/2" NPT	–	Loop	4–20 mA		–0.5 - 2	barg	PASSIVE	FLD	CR		E + H	PMP518	PMP518-BGBAAB6AA35IA1VNIA1	
69	TT-V6515A	1	Instrument	Common Area		V6515 Motor Temperature	V6515	–	Temperature Transmitter	RTD + TX	AI	–	50-80		200		–	Inserted	–	–	4–20 mA		0 - 200	°C	PASSIVE	FLD	CR		E + H	TM131	TM131-8F88B818X1AXAB3AA1AA1+MAMB	
70	TT-V6515B	1	Instrument	Common Area		V6515 Motor Temperature	V6515	–	Temperature Transmitter	RTD + TX	AI	–	50-80		200		–	Inserted	–	–	4–20 mA		0 - 200	°C	PASSIVE	FLD	CR		E + H	TM131	TM131-8F88B818X1AXAB3AA1AA1+MAMB	
71	TT-V6515C	1	Instrument	Common Area		V6515 Bearing Temperature	V6515	–	Temperature Transmitter	RTD + TX	AI	–	50-80		200		–	Inserted	–	–	4–20 mA		0 - 200	°C	PASSIVE	FLD	CR		E + H	TM131	TM131-8F88B818X1AXAB3AA1AA1+MAMB	
72	TT-V6515D	1	Instrument	Common Area		V6515 Bearing Temperature	V6515	–	Temperature Transmitter	RTD + TX	AI	–	50-80		200		–	Inserted	–	–	4–20 mA		0 - 200	°C	PASSIVE	FLD	CR		E + H	TM131	TM131-8F88B818X1AXAB3AA1AA1+MAMB	
73	VT-V6515	1	Instrument	Common Area		V6515 Vibration	V6515	–	Vibration Transmitter	Vibration TX	AI	–					–	Mounted	–	24 DC	4-20 mA		Vendor	mm/s	ACTIVE	FLD	CR		TBD by JN (Fan Manufacturer)	TBD by JN (Fan Manufacturer)	TBD by JN (Fan Manufacturer)	
74	ST-M1	1	Instrument	–		M-1 Shaft Speed ex	B6200	–	namur /proximity sensor	Shaft Speed	DI	–					–	Thread M8	–	8 VDC	pulse		5...30000 imp/min	rpm	ACTIVE	FLD	CR	brass special coating; PBT	PEPPERL +FUCHS	NJ1.5-8GM-N		CONNECT TO KFUB-EX1.D FREQUENCY - 4 ZOMA CONVERTER .DIN RAIL INSTALLED
75	ST-M2	1	Instrument	–		M-1 Shaft Speed ex	R6201	–	namur /proximity sensor	Shaft Speed	DI	–					–	Thread M8	–	8 VDC	pulse		5...30000 imp/min	rpm	ACTIVE	FLD	CR	brass special coating; PBT	PEPPERL +FUCHS	NJ1.5-8GM-N		CONNECT TO KFUB-EX1.D FREQUENCY - 4 ZOMA CONVERTER .DIN RAIL INSTALLED
76	ST-M3	1	Instrument	–		M-1 Shaft Speed ex	H6202	–	namur /proximity sensor	Shaft Speed	DI	–					–	Thread M8	–	8 VDC	pulse		5...30000 imp/min	rpm	ACTIVE	FLD	CR	brass special coating; PBT	PEPPERL +FUCHS	NJ1.5-8GM-N		CONNECT TO KFUB-EX1.D FREQUENCY - 4 ZOMA CONVERTER .DIN RAIL INSTALLED
77	ST-M4	1	Instrument	–		M-1 Shaft Speed ex	H6203	–	namur /proximity sensor	Shaft Speed	DI	–					–	Thread M8	–	8 VDC	pulse		5...30000 imp/min	rpm	ACTIVE	FLD	CR	brass special coating; PBT	PEPPERL +FUCHS	NJ1.5-8GM-N		CONNECT TO KFUB-EX1.D FREQUENCY - 4 ZOMA CONVERTER .DIN RAIL INSTALLED
78	ST-M5	1	Instrument	–		M-1 Shaft Speed ex	H6204	–	namur /proximity sensor	Shaft Speed	DI	–					–	Thread M8	–	8 VDC	pulse		5...30000 imp/min	rpm	ACTIVE	FLD	CR	brass special coating; PBT	PEPPERL +FUCHS	NJ1.5-8GM-N		CONNECT TO KFUB-EX1.D FREQUENCY - 4 ZOMA CONVERTER .DIN RAIL INSTALLED
79	ST-M6	1	Instrument	–		M-1 Shaft Speed ex	H6514	–	namur /proximity sensor	Shaft Speed	DI	–					–	Thread M8	–	8 VDC	pulse		5...30000 imp/min	rpm	ACTIVE	FLD	CR	brass special coating; PBT	PEPPERL +FUCHS	NJ1.5-8GM-N		CONNECT TO KFUB-EX1.D FREQUENCY - 4 ZOMA CONVERTER .DIN RAIL INSTALLED
80	ST-M7	1	Instrument	–		M-1 Shaft Speed ex	H6513	–	namur /proximity sensor	Shaft Speed	DI	–					–	Thread M8	–	8 VDC	pulse		5...30000 imp/min	rpm	ACTIVE	FLD	CR	brass special coating; PBT	PEPPERL +FUCHS	NJ1.5-8GM-N		CONNECT TO KFUB-EX1.D FREQUENCY - 4 ZOMA CONVERTER .DIN RAIL INSTALLED
81	VFD-B6200	1	VFD	–		B6200 Motor VFD	B6200	–	–	Continuous Command to VFD of B6200	AO	–					–		–	24 DC	4-20 mA		–	–	ACTIVE	CR	MCC		ABB/Siemens	STD	ABB / Siemens VFD – Vendor Std	
82	VFD-H6204	1	VFD	–		H6204 Motor VFD	H6204	–	–	Continuous Command to VFD of H6204	AO	–					–		–	24 DC	4-20 mA		–	–	ACTIVE	CR	MCC		ABB/Siemens	STD	ABB / Siemens VFD – Vendor St	
83	VFD-H6514	1	VFD	–		H6214 Motor VFD	H6204	–	–	Continuous Command to VFD of H6214	AO	–					–		–	24 DC	4-20 mA		–	–	ACTIVE	CR	MCC		ABB/Siemens	STD	ABB / Siemens VFD – Vendor St	
84	VFD-V6515	1	VFD	–		V6515 Motor VFD	V6515	–	–	Continuous Command to VFD of V6515	AO	–					–		–	24 DC	4-20 mA		–	–	ACTIVE	CR	MCC		ABB/Siemens	STD	ABB / Siemens VFD – Vendor St	

PM71B: is used instead of PMP51B in Aschach; max. temp. for PMP51B is 125°C -> diaphragm seal necessary but not found in spezification; communication with Bluetooth not an option too? Standard in Aschach is ISO228 G not 1/2" NPT, stainless steel TAG-plate missing; check type if anstallation in hygenic area

TM131: standard in Aschach is G1/2 316L/Ti (process connection), iTherm Strong Sens +500°, 4-wire, with Bluetooth and stainless steel TAG-plate; in hygenic areas iTherm 411 with process connection acc. DIN 11851 with TMT72 4-wire and Bluetooth is used

FT S101 acc. P&ID and list DN150 but specification 7F2C1H is DN100; standard in Aschach is 4-20mA+Imp./Frequ./Switch, 4-lins display, touch and split version

Pressure gauge: according EN 837-1, materials ?, class 1, shut-off device where included? WIKA is okay

FTM50: standard Aschach EN10226 R1-1/2, FEM52; 3-wire PNP 10-55VDC

Deltabar PMD78B: standard in Aschach with graph. display

Temperatur gauge: no further details specified, WIKA is okay

VFDs --> ABB ACS580/ACS880

general remark: process connection "Mounted" means?

Perten DA7430M: datasheet not found, not checked

general remark: cable glands M20 not NPT, ...

NJ1.5-8GM-N: 8mm okay

material/test certificates are not included (EN 10204) - to be discussed e.g. for FT S101, ...

are there any SIL requirements?

general remark: The suitability of the equipment for use in hygiene areas (as far as applicable) e. g. process connection has to be checked!

ATEX requirements - To be updated after Ex. Zoning plan.