

ตาราง I/O Point List

ท่าอากาศยานนานาชาติ

ศูนย์ควบคุมการบินพิษณุโลก

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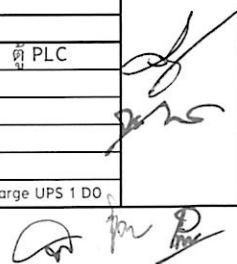
Project: Building Automation System (BAS)

Location: หอบังคับการบินน่าน

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network พว.สว.
							DI	DO	AI	AO	Comm		
Tower	1st	เถงทางเดิน	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
		ติดตั้งตู้ PLC	UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
		Outdoor	Storage Tank (ถังน้ำ)		Level	dry contact	3						
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)	
	2nd				Output ATS	RS485					1		มี VLAN68 (Microwave)
		Equipment	Split Type 25,997 Btu. No.2/1	SP TW 2/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 25,997 Btu. No.2/2	SP TW 2/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		Subtotal IO Amount					20	3	2	0	3	28	
		Spare Point					8	8	8				
		Subtotal IO Amount					28	11	10	0	3	52	
4th	UPS Room	Split Type 18,510.65 Btu. No.4/1	SP TW 4/1	Remote/Local	dry contact	1							
				Start-Stop	dry contact			1					
				On/Off Status	dry contact	1							
				Overload	dry contact	1							
				Status Compressor	dry contact	1							
				Over/Under Voltage	dry contact	2							
		Split Type 18,510.65 Btu. No.4/2	SP TW 4/2	Remote/Local	dry contact	1							
				Start-Stop	dry contact			1					
				On/Off Status	dry contact	1							
				Overload	dry contact	1							
				Status Compressor	dry contact	1							
				Over/Under Voltage	dry contact	2							
		Room Temperature		Temperature	Temp. Trans. 4-20 mA.				2				
	ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1						ตู้ PLC	
		UPS (DC)		Backup (BU)	dry contact	1							
				Trouble (TR)	dry contact	1							
				Batt Low (BL)	dry contact	1							
				Batt Replacement (WB)	dry contact	1							
				Discharge Battery	dry contact			1				Discharge UPS 1 DO	



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Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.	
							DI	DO	AI	AO	Comm			
		TMCS	Split Type 25,000 Btu. No.4/3	SP TW 4/3	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
				Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
	5th	Control Room	Split Type 27,086.50 Btu. No.5/1	SP TW 5/1	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
				Split Type 27,086.50 Btu. No.5/2	SP TW 5/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
				Split Type 27,086.50 Btu. No.5/3	SP TW 5/3	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
				Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
				Fire Alarm		Trouble	dry contact	1						
						Alarm	dry contact	1						
			Rotating Beacon		On/Off Status	dry contact	1							
					Overload	dry contact	1							
	Subtotal IO Amount							45	7	6	0	0		58
	Spare Point							8	8	8				
Subtotal IO Amount							53	15	14	0	0	82		
วิศวกร หมุนเวียน	1st	ห้องทำงาน	Split Type XX,XXX Btu. No.1/1	SP ENG 1/1	Remote/Local	dry contact	1					เดิน LAN มาจาก Tower ชั้น 2		
		จุดติดตั้ง Server /			Start-Stop	dry contact		1						
		Monitor (พร้อมโต๊ะวาง)			On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
				Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
NDB	1st	Equipment	Split Type 25,000 Btu. No.1/1	SP NDB 1/1	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							

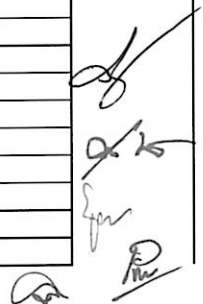
Project: Building Automation System (BAS)

Location: หอบังคับการบินน่าน

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.ศว.		
							DI	DO	AI	AO	Comm				
			Split Type 25,000 Btu. No.1/2	SP NDB 1/2	Remote/Local	dry contact	1						ตู้ PLC		
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2						
			Smoke Detector		Alarm	dry contact	1								
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1								
			UPS (DC)		Backup (BU)	dry contact	1								
					Trouble (TR)	dry contact	1								
					Batt Low (BL)	dry contact	1								
					Batt Replacement (WB)	dry contact	1								
					Discharge Battery	dry contact		1						Discharge UPS 1 DO	
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2			(PEA / GEN)	
					Output ATS	RS485					1				
			Heat Detector		Alarm	dry contact	1								
		โรงอาหาร	Smoke Detector		Alarm	dry contact	1								
		ห้องเก็บของ	Smoke Detector		Alarm	dry contact	1								
		ห้องปฏิบัติงาน	Smoke Detector		Alarm	dry contact	1								
		ติดตั้ง Wireless ส่งสัญญาณไปที่สถานี DVOR													
		Outdoor	Wireless									3			
		Subtotal IO Amount							28	4	4	0		3	39
		Spare Point							8	8	8				
		Subtotal IO Amount							36	12	12	0		3	63
DVOR	1st	Equipment	Split Type 25,300 Btu. No.1/1	SP DVOR 1/1	Remote/Local	dry contact	1					VLAN68 (Microwave)			
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Split Type 25,000 Btu. No.1/2	SP DVOR 1/2	Remote/Local	dry contact	1								
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Split Type 25,000 Btu. No.1/3	SP DVOR 1/3	Remote/Local	dry contact	1								
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Smoke Detector		Alarm	dry contact	1								
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2						



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							DI	DO	AI	AO	Comm				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC			
			UPS (DC)		Backup (BU)	dry contact	1								
					Trouble (TR)	dry contact	1								
					Batt Low (BL)	dry contact	1								
					Batt Replacement (WB)	dry contact	1								
					Discharge Battery	dry contact		1				Discharge UPS 1 DO			
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)			
					Output ATS	RS485					1				
			Heat Detector		Alarm	dry contact	1								
		โถงอาคาร	Smoke Detector		Alarm	dry contact	1								
		Office Room	Smoke Detector		Alarm	dry contact	1								
		ห้องเก็บของ	Smoke Detector		Alarm	dry contact	1								
		ด้านนอกอาคาร	Storage Tank#1 (น้ำใช้)		Level	dry contact	3					ถังน้ำถึงก้น			
			Storage Tank#2 (น้ำใช้)												
		ติดตั้ง Wireless ส่งสัญญาณไปที่สถานี NDB													
			Outdoor	Wireless											
		Subtotal IO Amount							31	4	2	0		3	40
		Spare Point							8	8	8				
		Subtotal IO Amount							39	12	10	0		3	64
	IO Sum Total							156	50	46	0	9	261		



ตาราง I/O Point List

ท่าอากาศยานแพร์

ศูนย์ควบคุมการบินพิษณุโลก

Handwritten signatures and initials in the bottom right corner, including a large signature at the top and several smaller initials below it.

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Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.สว.	
							DI	DO	AI	AO	Comm			
Tower	1st	ห้องวิศวกรหมุนเวียน	Split Type 18,000 Btu. No.1/3	SP TW 1/3	Remote/Local	dry contact	1							
		จุดติดตั้ง Server /			Start-Stop	dry contact		1						
		Monitor (พร้อมโต๊ะวาง)			On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
			Split Type 18,000 Btu. No.1/4	SP TW 1/4	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1						ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1							
					Trouble (TR)	dry contact	1							
					Batt Low (BL)	dry contact	1							
					Batt Replacement (WB)	dry contact	1							
					Discharge Battery	dry contact		1					Discharge UPS 1 DO	
				Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		โรงอาหาร	Fire Alarm		Trouble	dry contact	1							
					Alarm	dry contact	1							
		Outdoor	Storage Tank (ถังน้ำ)		Level	dry contact	3							
		Subtotal IO Amount							22	3	2	0	0	27
		Spare Point							8	8	8			
		Subtotal IO Amount							30	11	10	0	0	51
		4th	TMCS Room	Split Type 18,511 Btu. No.4/1	SP TW 4/1	Remote/Local	dry contact	1						
	Start-Stop					dry contact		1						
	On/Off Status					dry contact	1							
	Overload					dry contact	1							
	Status Compressor					dry contact	1							
	Over/Under Voltage					dry contact	2							
	Split Type 18,511 Btu. No.4/2			SP TW 4/2	Remote/Local	dry contact	1							
Start-Stop					dry contact		1							
On/Off Status					dry contact	1								
Overload					dry contact	1								
Status Compressor					dry contact	1								
Over/Under Voltage					dry contact	2								
Room Temperature				Temperature	Temp. Trans. 4-20 mA.			2						



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Date: 29/5/2568

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Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.สว.		
							DI	DO	AI	AO	Comm				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1						ตู้ PLC		
			UPS (DC)		Backup (BU)	dry contact	1								
					Trouble (TR)	dry contact	1								
					Batt Low (BL)	dry contact	1								
					Batt Replacement (WB)	dry contact	1								
					Discharge Battery	dry contact		1				Discharge UPS 1 DO			
		Subtotal IO Amount						17	3	2	0	0	22		
		Spare Point						8	8	8					
		Subtotal IO Amount						25	11	10	0	0	46		
		6th	Equipment	Split Type 18,000 Btu. No.6/1	SP TW 6/1	Remote/Local	dry contact	1						มี VLAN68	
Start-Stop	dry contact						1								
						On/Off Status	dry contact	1							
						Overload	dry contact	1							
						Status Compressor	dry contact	1							
						Over/Under Voltage	dry contact	2							
	Water leakage			Water leakage	On/off status	Water leakage sensor	1								
Split Type 26,000 Btu. No.6/2	SP TW 6/2			Remote/Local	dry contact	1									
				Start-Stop	dry contact		1								
						On/Off Status	dry contact	1							
						Overload	dry contact	1							
						Status Compressor	dry contact	1							
						Over/Under Voltage	dry contact	2							
Split Type 13,500 Btu. No.6/3	SP TW 6/3			Remote/Local	dry contact	1									
				Start-Stop	dry contact		1								
						On/Off Status	dry contact	1							
						Overload	dry contact	1							
						Status Compressor	dry contact	1							
						Over/Under Voltage	dry contact	2							
	Room Temperature				Temperature	Temp. Trans. 4-20 mA.			2						
ติดตั้งตู้ PLC	Surge 220V				Surge Alarm	dry contact	1								ตู้ PLC
					Backup (BU)	dry contact	1								
					Trouble (TR)	dry contact	1								
					Batt Low (BL)	dry contact	1								
					Batt Replacement (WB)	dry contact	1								
					Discharge Battery	dry contact		1					Discharge UPS 1 DO		
	ติดตั้ง Wireless ส่งสัญญาณไปที่อาคาร NDB และ Generator (NEW)														
	Outdoor			Wireless									NDB / GEN (NEW)		
	7th	Control Room	Split Type 27,000 Btu. No.7/1	SP TW 7/1	Remote/Local	dry contact	1								
					Start-Stop	dry contact		1							
						On/Off Status	dry contact	1							
						Overload	dry contact	1							
						Status Compressor	dry contact	1							
						Over/Under Voltage	dry contact	2							

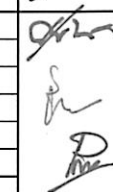
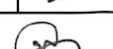


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Location: หอบังคับการบินแพร่

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.สว.
							DI	DO	AI	AO	Comm		
			Split Type 27,000 Btu. No.7/2	SP TW 7/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 26,000 Btu. No.7/3	SP TW 7/3	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
			Rotating Beacon		On/Off Status	dry contact	1						
					Overload	dry contact	1						
		Subtotal IO Amount					44	7	4	0	0	55	
		Spare Point					8	8	8				
		Subtotal IO Amount					52	15	12	0	0	79	
Generator (NEW)		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)	
			Heat Detector		Output ATS	RS485					1		
		ติดตั้งตู้ PLC	Surge 220V		Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Surge Alarm	dry contact	1						
					Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
		ติดตั้ง Wireless ส่งสัญญาณไปที่อาคารหอบังคับการบิน											
		Outdoor	Wireless									หอฯ	
		Subtotal IO Amount					6	1	0	0	3	10	
		Spare Point					8	8	8				
		Subtotal IO Amount					14	9	8	0	3	34	
NDB	1st	Equipment	Split Type 25,000 Btu. No.1/1	SP NDB 1/1	Remote/Local	dry contact	1						  
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 25,000 Btu. No.1/2	SP NDB 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Smoke Detector		Alarm	dry contact	1						

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Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.สว.		
							DI	DO	AI	AO	Comm				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC			
			UPS (DC)		Backup (BU)	dry contact	1								
					Trouble (TR)	dry contact	1								
					Batt Low (BL)	dry contact	1								
					Batt Replacement (WB)	dry contact	1								
					Discharge Battery	dry contact		1				Discharge UPS 1 DO			
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2						
		ห้องระบบไฟฟ้า	Smoke Detector		Alarm	dry contact	1								
		ห้องเก็บของ	Smoke Detector		Alarm	dry contact	1								
		ห้องโถง	Smoke Detector		Alarm	dry contact	1								
		ติดตั้ง Wireless ส่งสัญญาณไปที่อาคารหอบังคับการบิน													
		Outdoor	Wireless												
			Storage Tank (น้ำใช้)		Level	dry contact	3								
		Subtotal IO Amount							24	3	2	0		0	29
		Spare Point							8	8	8				
		Subtotal IO Amount							32	11	10	0		0	53
DVOR	1st	Equipment	Split Type 25,300 Btu. No.1/1	SP DVOR 1/1	Remote/Local	dry contact	1						มี VLAN68 (Microwave)		
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Split Type 25,000 Btu. No.1/2	SP DVOR 1/2	Remote/Local	dry contact	1								
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Split Type 25,000 Btu. No.1/3	SP DVOR 1/3	Remote/Local	dry contact	1								
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
				Smoke Detector		Alarm	dry contact	1							
				Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2					
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC			
			UPS (DC)		Backup (BU)	dry contact	1								
					Trouble (TR)	dry contact	1								
					Batt Low (BL)	dry contact	1								
					Batt Replacement (WB)	dry contact	1								
					Discharge Battery	dry contact		1				Discharge UPS 1 DO			
		Generator Room	ATS		Power Meter	Input Normal/Gen	RS485				2	(PEA / GEN)			
						Output ATS	RS485				1				
				Heat Detector		Alarm	dry contact	1							

Project: Building Automation System (BAS)

Location: หอบังคับการบินแพร์

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.
							DI	DO	AI	AO	Comm		
		โถงอาคาร	Smoke Detector		Alarm	dry contact	1						
		ห้องปฏิบัติงาน	Smoke Detector		Alarm	dry contact	1						
		ห้องเก็บของ	Smoke Detector		Alarm	dry contact	1						
		Outdoor	Storage Tank#1 (น้ำใช้)		Level	dry contact	3					ถึงน้ำถึงกัน	
			Storage Tank#2 (น้ำใช้)										
	Subtotal IO Amount						31	4	2	0	3	40	
	Spare Point						8	8	8				
	Subtotal IO Amount						39	12	10	0	3	64	
	IO Sum Total						193	69	60	0	6	328	



ตาราง I/O Point List

ท่าอากาศยานนานาชาติแม่สอด

ศูนย์ควบคุมการบินพิษณุโลก

Handwritten signatures and initials in the bottom right corner, including a large signature at the top, followed by '2625', and several smaller initials below.

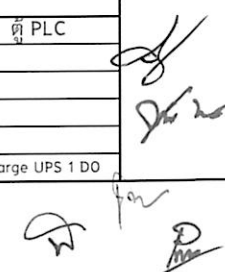
Project: Building Automation System (BAS)

Location: หอบังคับการบินแม่สอด

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.
							DI	DO	AI	AO	Comm		
Old Tower	1st	TMCS Room	Split Type 18,500 Btu. No.1/1	SP TW 1/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 18,500 Btu. No.1/2	SP TW 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
		Outdoor	Storage Tank (ถังน้ำ)		Level	dry contact	3						
		Subtotal IO Amount					20	3	2	0	0	25	
		Spare Point					8	8	8				
		Subtotal IO Amount					28	11	10	0	0	49	
	2nd	Equipment	Split Type 26,000 Btu. No.2/1	SP TW 2/1	Remote/Local	dry contact	1						VLAN68
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 26,000 Btu. No.2/2	SP TW 2/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	



Project: Building Automation System (BAS)

Location: หอบังคับการบินแม่สอด

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.สว.		
							DI	DO	AI	AO	Comm				
	4th	Control Room	Split Type 26,000 Btu. No.4/1	SP TW 4/1	Remote/Local	dry contact	1								
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Split Type 26,000 Btu. No.4/2	SP TW 4/2	Remote/Local	dry contact	1								
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Split Type 26,000 Btu. No.4/3	SP TW 4/3	Remote/Local	dry contact	1								
					Start-Stop	dry contact		1							
					On/Off Status	dry contact	1								
					Overload	dry contact	1								
					Status Compressor	dry contact	1								
					Over/Under Voltage	dry contact	2								
			Fire Alarm		Trouble	dry contact	1								
					Alarm	dry contact	1								
					Room Temperature	Temperature	Temp. Trans. 4-20 mA.			2					
			Rotating Beacon		On/Off Status	dry contact	1								
					Overload	dry contact	1								
		ติดตั้ง Wireless ส่งสัญญาณไปห้อาคาร Generator (Airside) / NDB													
			Outdoor	Wireless											GEN/NDB
		Subtotal IO Amount							39	6	4	0		0	49
		Spare Point							8	8	8				
		Subtotal IO Amount							47	14	12	0		0	73
		Generator (Airside)		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485						2	(PEA / GEN)
Output ATS	RS485										1				
ติดตั้งตู้ PLC	Surge 220V UPS (DC)				Heat Detector	Alarm	dry contact	1							
					Surge Alarm	dry contact	1								
					Backup (BU)	dry contact	1								
					Trouble (TR)	dry contact	1								
					Batt Low (BL)	dry contact	1								
					Batt Replacement (WB)	dry contact	1								
					Discharge Battery	dry contact		1				Discharge UPS 1 DO			
ติดตั้ง Wireless ส่งสัญญาณไปห้อาคารหอบังคับการบินเก่า															
Outdoor	Wireless														
Subtotal IO Amount							6	1	0	0	3	10			
Spare Point							8	8	8						
Subtotal IO Amount							14	9	8	0	3	34			



Project: Building Automation System (BAS)

Location: หอบังคับการบินแม่สอด

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.ศว.
							DI	DO	AI	AO	Comm		
NDB	1st	Equipment	Split Type 26,400 Btu. No.1/1	SP NDB 1/1	Remote/Local	dry contact	1						ไม่มี
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 25,900 Btu. No.1/2	SP NDB 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Smoke Detector		Alarm	dry contact	1						
					Room Temperature	Temperature			2				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
					Backup (BU)	dry contact	1						
			UPS (DC)		Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)	
					Output ATS	RS485					1		
			Heat Detector		Alarm	dry contact	1						
		ติดตั้ง Wireless ส่งสัญญาณไปที่อาคารหอบังคับการบินเก่า											
		Outdoor	Wireless										
		Subtotal IO Amount					19	3	2	0	3	27	
		Spare Point					8	8	8				
		Subtotal IO Amount					27	11	10	0	3	51	
DVOR	1st	Equipment	Split Type 25,000 Btu. No.1/1	SP DVOR 1/1	Remote/Local	dry contact	1						มี VLAN68
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 25,000 Btu. No.1/2	SP DVOR 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						



Project: Building Automation System (BAS)
 Location: หอบังคับการบินแม่สอด

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.
							DI	DO	AI	AO	Comm		
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Backup Stop (BS)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
			Smoke Detector		Alarm	dry contact	1						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)	
					Output ATS	RS485					1		
			Heat Detector		Alarm	dry contact	1						
			Smoke Detector		Alarm	dry contact	1						
			Smoke Detector		Alarm	dry contact	1						
			Outdoor	Storage Tank (น้ำใช้)	Level	dry contact	3						
		Subtotal IO Amount					25	3	2	0	3	33	
		Spare Point					8	8	8				
		Subtotal IO Amount					33	11	10	0	3	57	
New Tower	1st	MDB	Split Type 18,700 Btu. No.1/4	SP NTW 1/4	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 18,700 Btu. No.1/5	SP NTW 1/5	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
					Level	dry contact	3						
	2nd	ห้องวิศวกรหอฯ	Split Type 30,500 Btu. No.2/1	SP NTW 2/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 30,500 Btu. No.2/2	SP NTW 2/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
			Room Temperature		Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				



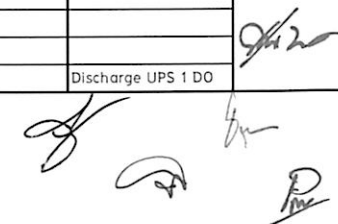
Project: Building Automation System (BAS)

Location: หอบังคับการบินแม่สอด

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.ศว.
							DI	DO	AI	AO	Comm		
			Fire Alarm		Trouble	dry contact	1						VLAN68
					Alarm	dry contact	1						
		Equipment	Split Type 60,000 Btu. No.2/3	SP NTW 2/3	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 60,000 Btu. No.2/4	SP NTW 2/4	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			4				
		Spare Parts	Split Type 18,700 Btu. No.2/5	SP NTW 2/5	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		UPS	Split Type 18,700 Btu. No.2/6	SP NTW 2/6	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 18,700 Btu. No.2/7	SP NTW 2/7	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	



Project: Building Automation System (BAS)

Location: หอบังคับการบินแม่สอด

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.สว.	
							DI	DO	AI	AO	Comm			
		Battery	Split Type 13,000 Btu. No.2/8	SP NTW 2/8	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
			Split Type 13,000 Btu. No.2/9	SP NTW 2/9	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
				Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		Subtotal IO Amount							76	12	14	0	0	102
		Spare Point							8	8	8			
		Subtotal IO Amount							84	20	22	0	0	126
		3rd	ติดตั้ง Wireless สัญญาณไปที่อาคาร Generator (NEW)											
	Outdoor	Wireless												
4th	ติดตั้งตู้ PLC	Surge 220V			Surge Alarm	dry contact	1					ตู้ PLC		
		UPS (DC)			Backup (BU)	dry contact	1							
					Trouble (TR)	dry contact	1							
					Batt Low (BL)	dry contact	1							
					Batt Replacement (WB)	dry contact	1							
					Discharge Battery	dry contact		1				Discharge UPS 1 DO		
5th	Control Room	Split Type 60,000 Btu. No.5/1	SP NTW 5/1	Remote/Local	dry contact	1								
				Start-Stop	dry contact		1							
				On/Off Status	dry contact	1								
				Overload	dry contact	1								
				Status Compressor	dry contact	1								
				Over/Under Voltage	dry contact	2								
		Split Type 60,000 Btu. No.5/2	SP NTW 5/2	Remote/Local	dry contact	1								
	Start-Stop			dry contact		1								
	On/Off Status			dry contact	1									
	Overload			dry contact	1									
	Status Compressor			dry contact	1									
	Over/Under Voltage			dry contact	2									
		Split Type XX,XXX Btu. No.5/3 (เมื่อ Point ติดตั้งในอนาคต)	SP NTW 5/3	Remote/Local	dry contact	1								
	Start-Stop			dry contact		1								
	On/Off Status			dry contact	1									
	Overload			dry contact	1									
	Status Compressor			dry contact	1									
	Over/Under Voltage			dry contact	2									



Project: Building Automation System (BAS)
 Location: หอบังคับการบินแม่สอด

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.
							DI	DO	AI	AO	Comm		
			Split Type XX,XXX Btu. No.5/4 (เพื่อ Point ติดตั้งในขนาด)	SP NTW 5/4	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			3				
			Rotating Beacon		On/Off Status	dry contact	1						
					Overload	dry contact	1						
			Subtotal IO Amount				31	5	3	0	0	39	
			Spare Point				8	8	8				
			Subtotal IO Amount				39	13	11	0	0	63	
Generator (NEW)	1st	Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)	ไม่มี VLAN68
					Output ATS	RS485					1		
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
		ติดตั้ง Wireless สัญญาณไปอาคาร New Tower											
		Outdoor	Wireless										
		Subtotal IO Amount					5	1	0	0	3	9	
		Spare Point					8	8	8				
		Subtotal IO Amount					13	9	8	0	3	33	
TX	1st	Office	Split Type 12,000 Btu. No.1/1	SP TX 1/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		Equipment	Split Type 40,000 Btu. No.1/2	SP TX 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 40,000 Btu. No.1/3	SP TX 1/3	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					มี VLAN68
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
					Temperature	Temp. Trans. 4-20 mA.			3				

Project:

Building Automation System (BAS)

Location:

ห้องบังคับการบินแม่สอด

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.ศว.
							DI	DO	AI	AO	Comm		
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
		Subtotal IO Amount					23	4	5	0	0	32	
		Spare Point					8	8	8				
		Subtotal IO Amount					31	12	13	0	0	56	
		IO Sum Total					316	110	104	0	12	542	






ตาราง I/O Point List

ท่าอากาศยานสุโขทัย

ศูนย์ควบคุมการบินพิษณุโลก



Project: Building Automation System (BAS)

Location: หอบังคับการปิ่นสุทธานท์

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network พว.พว.
							DI	DO	AI	AO	Comm		
Tower	1st	TMCS Room	Split Type 36,000 Btu. No.1/1	SP TW 1/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 36,000 Btu. No.1/2	SP TW 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
	3rd	Equipment	Split Type 36,600 Btu. No.3/1	SP TW 3/1	Remote/Local	dry contact	1						VLAN68
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 36,600 Btu. No.3/2	SP TW 3/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
		ติดตั้งตู้ PLC	Surge 220V UPS (DC)		Surge Alarm	dry contact	1					ตู้ PLC	
					Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Remote On/Off	dry contact		1				Discharge UPS 1 DO	
	4th	Control Room	Split Type 36,000 Btu. No.4/1	SP TW 4/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 36,000 Btu. No.4/2	SP TW 4/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.	
							DI	DO	AI	AO	Comm			
			Split Type 25,200 Btu. No.4/3	SP TW 4/3	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2					
			Rotating Beacon		On/Off Status	dry contact	1							
					Overload	dry contact	1							
		Subtotal IO Amount						51	8	6	0	0	65	
		Spare Point						8	8	8				
Subtotal IO Amount						59	16	14	0	0	89			
วิศวกร หมุนเวียน	1st	ห้องวิศวกรหมุนเวียน	Split Type 26,000 Btu. No.1/3	SP ENG 1/3	Remote/Local	dry contact	1							
		จุดติดตั้ง Server / Monitor (พร้อมโต๊ะวาง)			Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
			Split Type XXXXXX Btu. No.1/4	SP ENG 1/4	Remote/Local	dry contact	1							
			(Spare ขนาดติดตั้งเพิ่ม)		Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1						ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1							
					Trouble (TR)	dry contact	1							
					Batt Low (BL)	dry contact	1							
					Batt Replacement (WB)	dry contact	1							
					Discharge Battery	dry contact		1					Discharge UPS 1 DO	
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2					
		Subtotal IO Amount						17	3	2	0	0	22	
Spare Point						8	8	8						
Subtotal IO Amount						25	11	10	0	0	46			
NDB	1st	Equipment	Split Type 20,000 Btu. No.1/1	SP NDB 1/1	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
			Split Type 20,000 Btu. No.1/2	SP NDB 1/2	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							

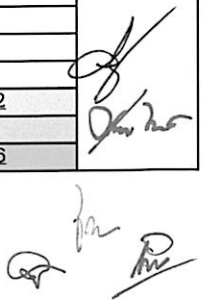
Project: Building Automation System (BAS)

Location: หอบังคับการบินสุโขทัย

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.	
							DI	DO	AI	AO	Comm			
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC		
			UPS (DC)		Backup (BU)	dry contact	1							
					Trouble (TR)	dry contact	1							
					Batt Low (BL)	dry contact	1							
					Batt Replacement (WB)	dry contact	1							
					Discharge Battery	dry contact		1				Discharge UPS 1 DO		
			Water leakage	Water leakage	On/off status	Water leakage sensor	2							
			Smoke Detector		Alarm	dry contact	1							
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2					
		Subtotal IO Amount						20	3	2	0	0		25
		Spare Point						8	8	8				
		Subtotal IO Amount						28	11	10	0	0		49
LOC	1st	Equipment	Split Type 25,800 Btu. No.1/1	SP LOC 1/1	Remote/Local	dry contact	1						มี VLAN68 (Microwave)	
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
			Split Type 25,800 Btu. No.1/2	SP LOC 1/2	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
					Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
			Smoke Detector		Alarm	dry contact	1							
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC		
			UPS (DC)		Backup (BU)	dry contact	1							
					Trouble (TR)	dry contact	1							
					Batt Low (BL)	dry contact	1							
					Batt Replacement (WB)	dry contact	1							
					Discharge Battery	dry contact		1				Discharge UPS 1 DO		
					Temperature	Temp. Trans. 4-20 mA.			2					
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)		
					Output ATS	RS485					1			
			Heat Detector		Alarm	dry contact	1							
		โถงอาคาร	Smoke Detector		Alarm	dry contact	1							
		ห้องเก็บของ	Smoke Detector		Alarm	dry contact	1							
		Outdoor	Storage Tank (น้ำใช้ - ใต้ดิน)		Level	dry contact	3							
Subtotal IO Amount						24	3	2	0	3	32			
Spare Point						8	8	8						
Subtotal IO Amount						32	11	10	0	3	56			



Project: Building Automation System (BAS)
Location: หอบังคับการบินสุโขทัย

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.พว.
							DI	DO	AI	AO	Comm		
GP	1st	Equipment	Split Type 25,800 Btu. No.1/1	SP GP 1/1	Remote/Local	dry contact	1						VLAN68 (Microwave)
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
		Split Type 25,800 Btu. No.1/2	SP GP 1/2		Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Smoke Detector		Alarm	dry contact	1						
					Temperature	Temp. Trans. 4-20 mA.			2				
					Surge Alarm	dry contact	1						
					Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
			Generator Room	Power Meter	Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
					Input Normal/Gen	RS485					2	(PEA / GEN)	
					Output ATS	RS485					1		
					Heat Detector	Alarm	1						
					Alarm	dry contact	1						
			ห้องเก็บของ		Alarm	dry contact	1						
					Alarm	dry contact	1						
		Outdoor	Storage Tank (น้ำใช้ - ใต้ดิน)		Level	dry contact	3						
		Subtotal IO Amount					24	3	2	0	3	32	
		Spare Point					8	8	8				
		Subtotal IO Amount					32	11	10	0	3	56	
		IO Sum Total					176	60	54	0	6	296	

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ตาราง I/O Point List

ท่าอากาศยานเพชรบูรณ์

ศูนย์ควบคุมการบินพิษณุโลก



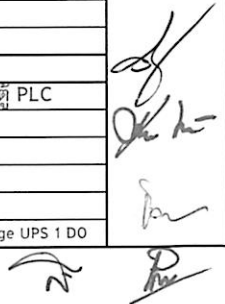
Project: Building Automation System (BAS)

Location: หอบังคับการบินเพชรบูรณ์

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.
							DI	DO	AI	AO	Comm		
Tower	1st	ห้องทำงาน	Split Type 25,200 Btu. No.1/1	SP TW 1/1	Remote/Local	dry contact	1						
		วิศวกรหมุนเวียน	(Cassette Type)		Start-Stop	dry contact		1					
		จุดติดตั้ง Server /			On/Off Status	dry contact	1						
		Monitor (พร้อมโต๊ะวาง)			Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 25,200 Btu. No.1/2	SP TW 1/2	Remote/Local	dry contact	1						
			(Cassette Type)		Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		แจ้งอาคาร	Fire Alarm		Trouble	dry contact	1						
					Alarm	dry contact	1						
		Outdoor	Storage Tank (ถังน้ำ)		Level	dry contact	3						
		Subtotal IO Amount					22	3	2	0	0	27	
		Spare Point					8	8	8				
		Subtotal IO Amount					30	11	10	0	0	51	
4th	TMCS Room		Split Type 18,500 Btu. No.4/1	SP TW 4/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 18,500 Btu. No.4/2	SP TW 4/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	



Project: Building Automation System (BAS)

Location: หอบังคับการบินเพชรบูรณ์

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.
							DI	DO	AI	AO	Comm		
	5th	ติดตั้ง Wireless ส่งสัญญาณไปอาคาร Generator / NDB											
		Outdoor	Wireless									GEN/NDB	
		Subtotal IO Amount					17	3	2	0	0	22	
		Spare Point					8	8	8				
	Subtotal IO Amount						25	11	10	0	0	46	VLAN68
	6th	Equipment	Split Type 18,000 Btu. No.6/1	SP TW 6/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 27,000 Btu. No.6/2	SP TW 6/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Water leakage	Water leakage	On/off status	Water leakage sensor	2						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
	7th	Control Room	Split Type 27,000 Btu. No.7/1	SP TW 7/1	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 27,000 Btu. No.7/2	SP TW 7/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 27,000 Btu. No.7/3	SP TW 7/3	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						



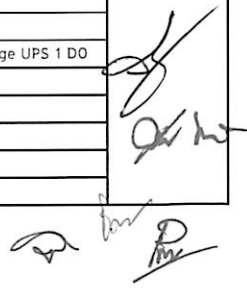
Project: Building Automation System (BAS)

Location: หอบังคับการบินเพชรบูรณ์

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.สว.	
							DI	DO	AI	AO	Comm			
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2					
			Rotating Beacon		On/Off Status	dry contact	1							
					Overload	dry contact	1							
		Subtotal IO Amount					39	6	4	0	0	49		
		Spare Point					8	8	8					
		Subtotal IO Amount					47	14	12	0	0	73		
Generator (Airside)		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)	ไม่ใช้	
		(AFL)			Output ATS	RS485					1			
			Heat Detector		Alarm	dry contact	1							
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1							
			UPS (DC)		Backup (BU)	dry contact	1							
					Trouble (TR)	dry contact	1							
					Batt Low (BL)	dry contact	1							
					Batt Replacement (WB)	dry contact	1							
					Discharge Battery	dry contact		1				Discharge UPS 1 DO		
		ติดตั้ง Wireless ส่งสัญญาณไปอาคารหอบังคับการบิน												
		Outdoor	Wireless											
		Subtotal IO Amount					6	1	0	0	3	10		
Spare Point					8	8	8							
Subtotal IO Amount					14	9	8	0	3	34				
NDB	1st	Equipment	Split Type 26,400 Btu. No.1/1	SP NDB 1/1	Remote/Local	dry contact	1						ไม่ใช้	
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
			Split Type 26,400 Btu. No.1/2	SP NDB 1/2	Remote/Local	dry contact	1							
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC		
			UPS (DC)		Backup (BU)	dry contact	1							
					Trouble (TR)	dry contact	1							
					Batt Low (BL)	dry contact	1							
					Batt Replacement (WB)	dry contact	1							
					Discharge Battery	dry contact		1				Discharge UPS 1 DO		
				Smoke Detector		Alarm	dry contact	1						
				Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
				เฝ้าอาคาร	Smoke Detector		Alarm	dry contact	1					
				ห้องเก็บของ#1	Smoke Detector		Alarm	dry contact	1					
		ห้องเก็บของ#2	Smoke Detector		Alarm	dry contact	1							



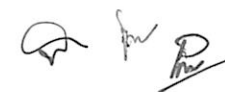
Project: Building Automation System (BAS)

Location: หอบังคับการบินเพชรบูรณ์

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศร.สว.	
							DI	DO	AI	AO	Comm			
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)		
					Output ATS	RS485					1			
			Heat Detector		Alarm	dry contact	1							
		ติดตั้ง Wireless ส่งสัญญาณไปที่อาคารหอบังคับการบิน												
		Outdoor	Wireless											
		Subtotal IO Amount						22	3	2	0	3		30
		Spare Point						8	8	8				
		Subtotal IO Amount						30	11	10	0	3		54
LOC	1st	Equipment	Split Type 25,800 Btu. No.1/1	SP LLZ 1/1	Remote/Local	dry contact	1						มี VLAN68 (Microwave)	
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
				Split Type 25,800 Btu. No.1/2	SP LLZ 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							
				Smoke Detector		Alarm	dry contact	1						
				Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		ติดตั้งตู้ PLC		Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
				UPS (DC)		Backup (BU)	dry contact	1						
						Trouble (TR)	dry contact	1						
						Batt Low (BL)	dry contact	1						
						Batt Replacement (WB)	dry contact	1						
						Discharge Battery	dry contact		1				Discharge UPS 1 DO	
		Generator Room		ATS		Power Meter	Input Normal/Gen					2	(PEA / GEN)	
							Output ATS					1		
				Heat Detector			Alarm	1						
		โถงอาคาร		Smoke Detector			Alarm	1						
		ห้องเก็บของ		Smoke Detector			Alarm	1						
		Subtotal IO Amount						21	3	2	0	3	29	
		Spare Point						8	8	8				
		Subtotal IO Amount						29	11	10	0	3	53	
		GP	1st	Equipment	Split Type 25,800 Btu. No.1/1	SP GP 1/1	Remote/Local	dry contact	1					
					Start-Stop	dry contact		1						
					On/Off Status	dry contact	1							
					Overload	dry contact	1							
					Status Compressor	dry contact	1							
					Over/Under Voltage	dry contact	2							



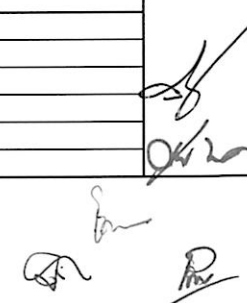
Project: Building Automation System (BAS)

Location: หอบังคับการบินเพชรบูรณ์

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network พว.สว.
							DI	DO	AI	AO	Comm		
			Split Type 25,800 Btu. No.1/2	SP GP 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Smoke Detector		Alarm	dry contact	1						
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2				
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC	
			UPS (DC)		Backup (BU)	dry contact	1						
					Trouble (TR)	dry contact	1						
					Batt Low (BL)	dry contact	1						
					Batt Replacement (WB)	dry contact	1						
					Discharge Battery	dry contact		1				Discharge UPS 1 DO	
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)	
					Output ATS	RS485					1		
			Heat Detector		Alarm	dry contact	1						
		แจ้งอาคาร	Smoke Detector		Alarm	dry contact	1						
		ห้องเก็บของ	Smoke Detector		Alarm	dry contact	1						
		Subtotal IO Amount					21	3	2	0	3	29	
		Spare Point					8	8	8				
		Subtotal IO Amount					29	11	10	0	3	53	
DVOR	1st	Equipment	Split Type 25,000 Btu. No.1/1	SP DVOR 1/1	Remote/Local	dry contact	1						VLAN68 (Microwave)
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 25,000 Btu. No.1/2	SP DVOR 1/2	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						
			Split Type 26,400 Btu. No.1/3	SP DVOR 1/3	Remote/Local	dry contact	1						
					Start-Stop	dry contact		1					
					On/Off Status	dry contact	1						
					Overload	dry contact	1						
					Status Compressor	dry contact	1						
					Over/Under Voltage	dry contact	2						



Project: Building Automation System (BAS)

Location: หอบังคับการบินเพชรบูรณ์

Date: 29/5/2568

IO List (draft)

Building	Floor	System/Location	Equipment	Sub-equipment/Code	Signal	Type	IO Type					Note	Network ศว.สว.	
							DI	DO	AI	AO	Comm			
		ติดตั้งตู้ PLC	Surge 220V		Surge Alarm	dry contact	1					ตู้ PLC		
			UPS (DC)		Backup (BU)	dry contact	1							
					Trouble (TR)	dry contact	1							
					Batt Low (BL)	dry contact	1							
					Batt Replacement (WB)	dry contact	1							
					Discharge Battery	dry contact		1				Discharge UPS 1 DO		
			Smoke Detector		Alarm	dry contact	1							
			Room Temperature		Temperature	Temp. Trans. 4-20 mA.			2					
		Generator Room	ATS	Power Meter	Input Normal/Gen	RS485					2	(PEA / GEN)		
					Output ATS	RS485					1			
			Heat Detector		Alarm	dry contact	1							
		โดงอาคาร	Smoke Detector		Alarm	dry contact	1							
		ห้องเก็บของ#1	Smoke Detector		Alarm	dry contact	1							
		ห้องเก็บของ#2	Smoke Detector		Alarm	dry contact	1							
		Subtotal IO Amount						28	4	2	0	3		37
		Spare Point						8	8	8				
		Subtotal IO Amount						36	12	10	0	3		61
IO Sum Total						240	90	80	0	15	425			

