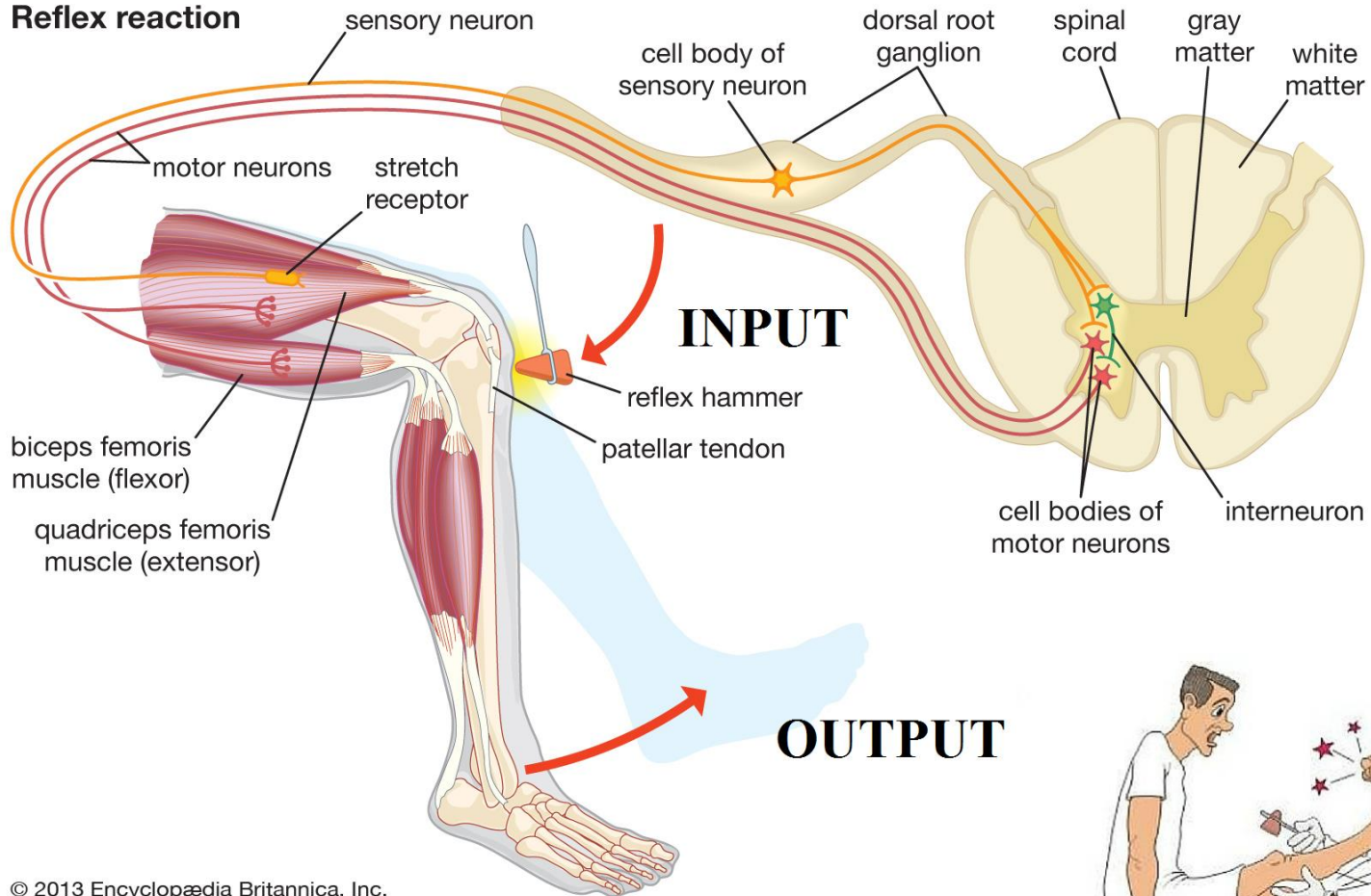


Asas Kawalan

24 Februari 2020

Reflex reaction



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3 Elemen Asas Kawalan

1. Sensor
2. Controller
3. Controlled Device

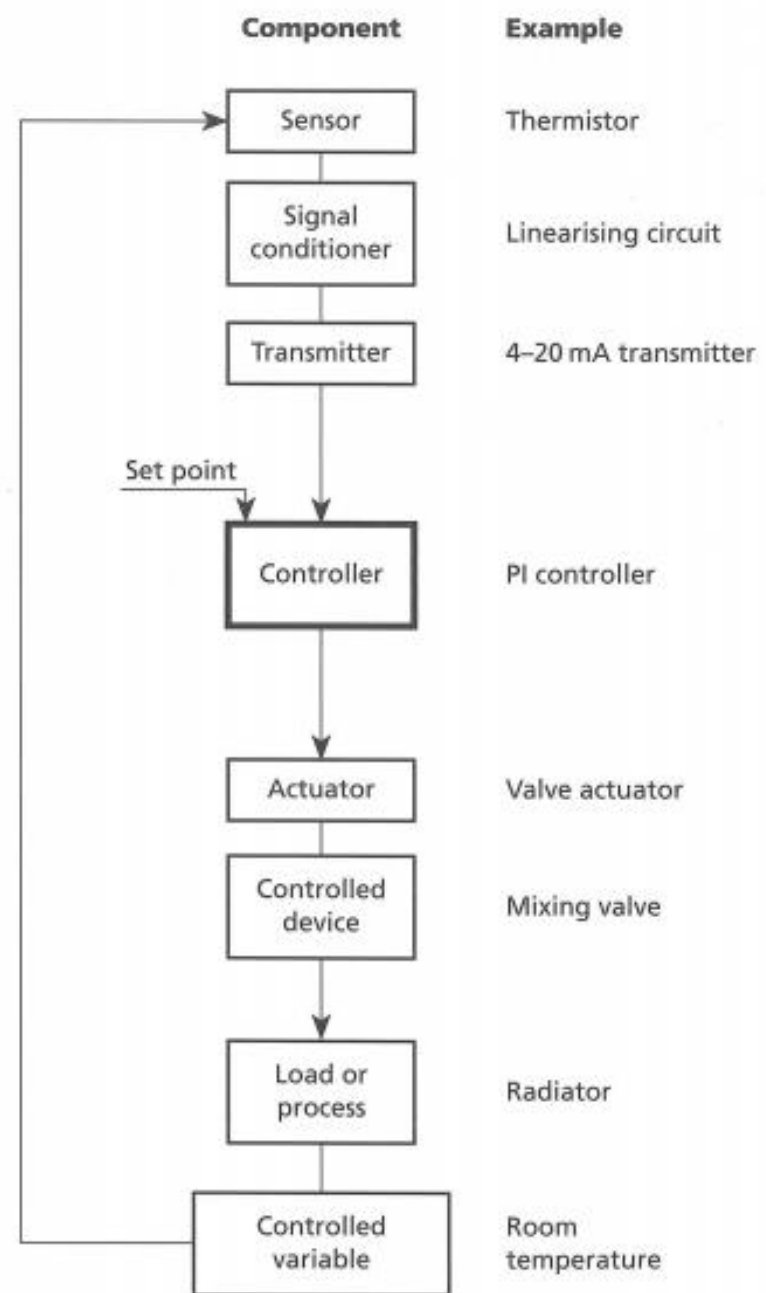


Figure 2.1 The components of a control system; in practice, some components may be combined

In BMS

INPUTS:- Sensors	
Temperature (of room)	
Humidity (of room)	
Flow Rate (chilled Water)	
Pressure (of Fire Hydrant)	
Level (of a Tank)	 
Run status (Pumps, Fans)	 

In BMS

OUTPUTS:- Control

Valves



VFD Speed Command



Air Dampers Actuators



ON-OFF Command (Fans, Pumps, Boilers)



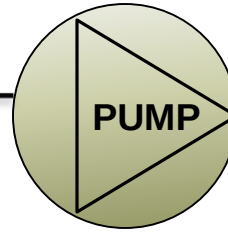
Jenis Isyarat Kawalan (Control Signal)

Control Points

- Binary Input Point (fan status on/off)
- Binary Output Point (start stop fan/pump, open/close damper)
- Analog Input Point (temperature, pressure, airflow)
- Analog Output Point (control valve or damper position)

Nota: Bangunan bersaiz sederhana anggaran dalam 800 – 2000 sensory points atau I/O points

CHW & CDW PUMP



PUMP CP

PUMP RUN STATUS

PUMP START/STOP COMMAND

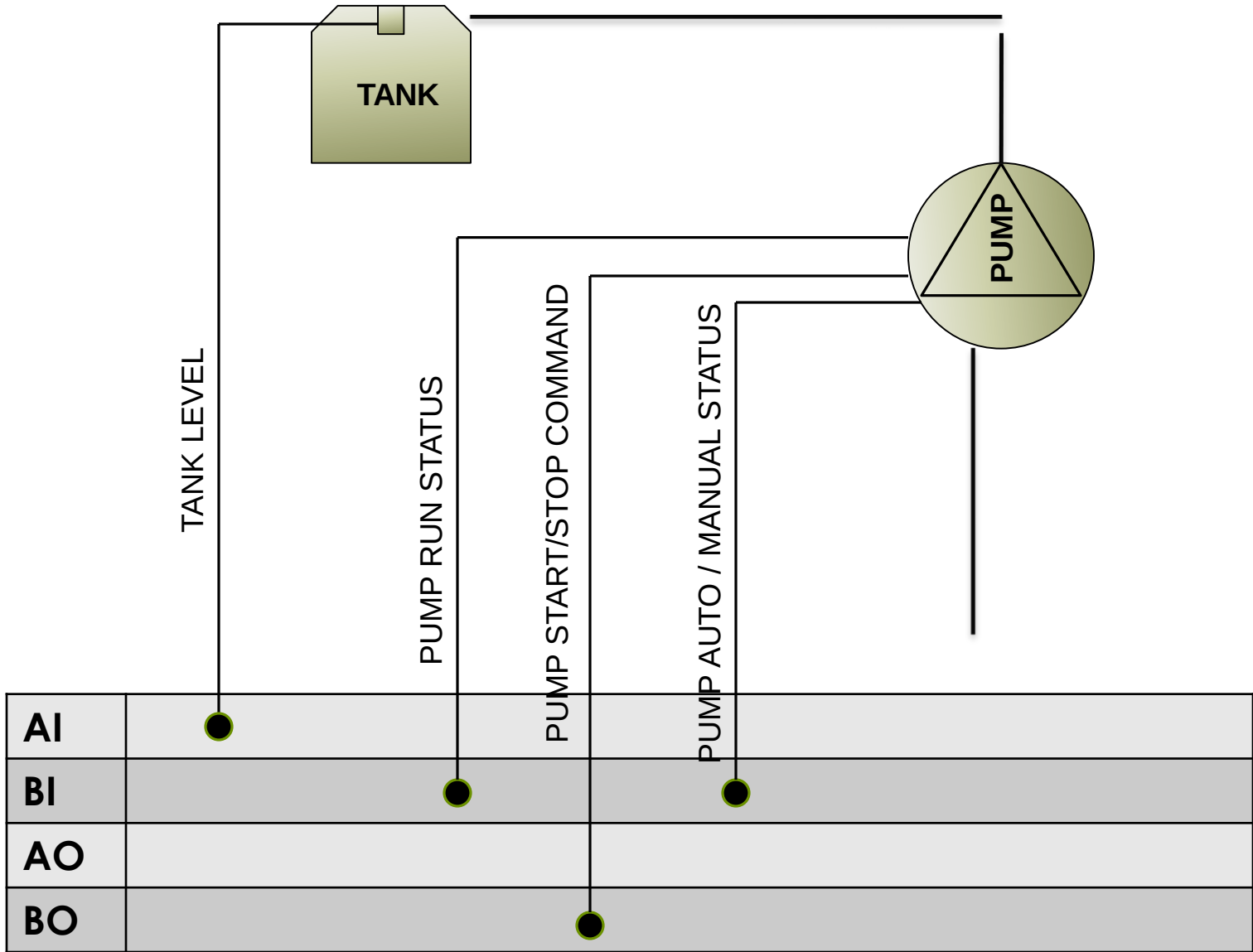
PUMP AUTO / MANUAL STATUS

DDC

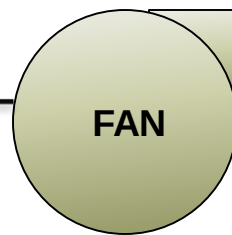
AI	
BI	
AO	
BO	

WATER TANK

DDC



EXHAUSE FAN



PUMP RUN STATUS

PUMP START/STOP COMMAND

PUMP AUTO / MANUAL STATUS

DDC

AI	
BI	
AO	
BO	

Tentukan I/O points

No.	I/O Description	AI	DI	AO	DO	FIELD DEVICE
1	AHU On/Off					
2	AHU Run Status					
3	AHU Auto/Manual Status					
4	AHU Filter Status					
5	Return Air Temperature					
6	2 way chilled water modulating valve control					
7	Chilled water return header flow rate					
	TOTAL					