OP719-V01



PRODUCT PROFILE & FEATURES

- Pump Protection from dry run and overflow condition
- Specially designed sensors
- Trip relay & Alarm relay indication
- 5A SPST output relay (Resistive)
- Manual start switch facility
- Water levels & Trip indication LED's
- Used for Two tank and Single tank water level monitoring
- Selectable Suction and Delivery mode in Single tank operation

SPECIFICATIONS

AUXILIARY SUPPLY : 85 – 270V AC/DC
FREQUENCY : 50Hz/60Hz
POWER RATING : 4VA max.
INPUT SENSOR : Stainless steel prods
TRIP SETTING : According to the levels of sensor placed in the water tank.
TRIP TIME DELAY : 2 sec
RECOVERY TIME : 2 sec
RESET : Automatic
TIME ACCURACY : ±5% of 2sec
OUTPUT SPECIFICATION
Relay Rating : 1 N/O(Resistive)
5A@250VAC/28VDC
MECHANICAL SPECIFICATIONS
Dimension : 35x90x60mm
Mounting : 35mm DIN Rail mount
Screw tightening torque : 0.5N.m
ENVIRONMENTAL SPECIFICATIONS
– Impulse Withstand Voltage : 4kV
– Indoor use
– Altitude of up to 2000 meters
– Pollution degree 2
– Operating Temperature : 0° to 50°C
– Storage Temperature : -20° to 70°C
– Humidity : Up to 95% RH, non-condensing
WEIGHT
Sensor : 50gms each
Unit : 100gms
CERTIFICATION : IEC60947-5-1

APPLICATIONS

1. This product protects the motor from dry run condition; thus ensures durability.
2. The automatic sensing of levels and controlling algorithm ensures 24 hours water supply without any kind of interruption, which fortunately saves water & human Efforts.
3. This device operates with sensors which are specially designed to monitor the water level in tanks. These sensors are safe, electrically isolated from mains, plastic moulded & non-corrosive so it lasts longer.

MODE SELECTION AND OPERATION

This product operates in following modes :
1. Single tank mode
Suction Logic - Single level, Two level, with/without alarm
Delivery Logic - Single level, Two level, with/without alarm
2. Dual tank mode

FUNCTION OF SINGLE TANK MODE (SUCTION OR DELIVERY LOGIC)

When product is to be used with Single Tank Mode with Suction/Delivery Logic,
- Sensors P4, P5 & P6 are not connected/kept open.
- Lower and upper water level measurement is done with sensor P2 & P3 respectively, considering P1 as reference.

FUNCTION OF TWO TANK MODE (SUCTION AND DELIVERY LOGIC)

When product is to be used in two tank logic,
- The system starts up whenever water is to be supplied to delivery tank and suction tank has sufficient level to supply it & it stops when the water reaches its maximum level in the delivery tank or if the suction tank reaches its minimum level.
- P1 is considered reference for suction tank & measurement is done with sensor P2 & P3 for two level and with sensor P2 for single level.
- Similarly for delivery tank, P4 is considered as reference & measurement is done with Sensor P5 & P6 for two level and sensor P5 for single level.

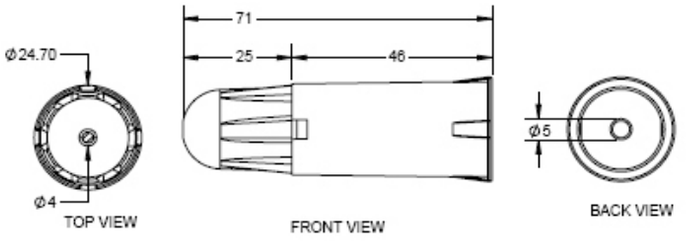
FUNCTION OF ALARM LOGIC

When product is to be used in single tank mode with alarm,
- Sensor P1+P4 are shorted so as to act as single reference.
- Measurement is done with sensor P2 & P3 for different level indication.
- Sensor P5 & P6 are considered to indicate alarm condition.

INPUT SENSOR

- This product is to be used with Selec sensor prod only.
- The Selec sensor prod has a bolting arrangement for connecting a suitable cable and it is to be suspended from top opening of the water tank.
- Sensor Material : Stainless steel

INPUT SENSOR DIMENSIONS



LED INDICATION CHART

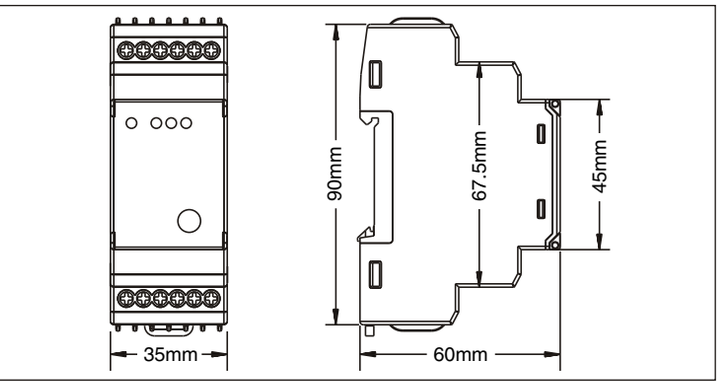
Sr.No.	LED Color	Notation	Indication
1	Green	ON	Power ON
2	Yellow1	S	Suction Tank Level Indication
3	Yellow2	D	Delivery Tank Level Indication
4	Red	R	Relay Indication

CONFIGURATION SETTING

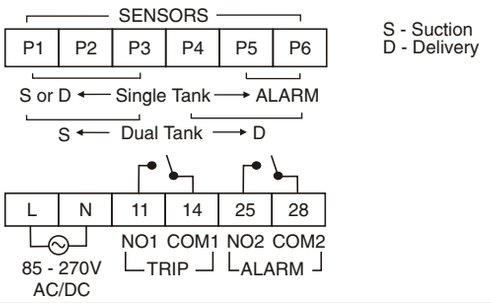
To enter configuration mode, all the sensors should be disconnected from unit or should be out of water. Either of the three modes i.e Single Tank (Suction), Single Tank (Delivery), Two Tank (Suction & Delivery) can be selected. Default mode is Two Tank (S&D).

Step	Condition	START Key	LED INDICATION (Once entered config mode)				Duration
			ON	S	D	R	
1	Enter Configuration	Press for 5sec	ON	Blink	Blink	Blink	3 sec
2	Mode Selection	Press key to switch between modes					10 sec
		1. Two Tank (S&D)	ON	ON	ON	OFF	
		2. Single tank (S)	ON	ON	OFF	OFF	
		3. Single tank (D)	ON	OFF	ON	OFF	
3	Exit Configuration	-	ON	Blink	Blink	Blink	3 sec
4	After 10secs unit will auto exit configuration mode, considering mode present during the time of exit for further operation						

MECHANICAL INSTALLATION / DIMENSIONS

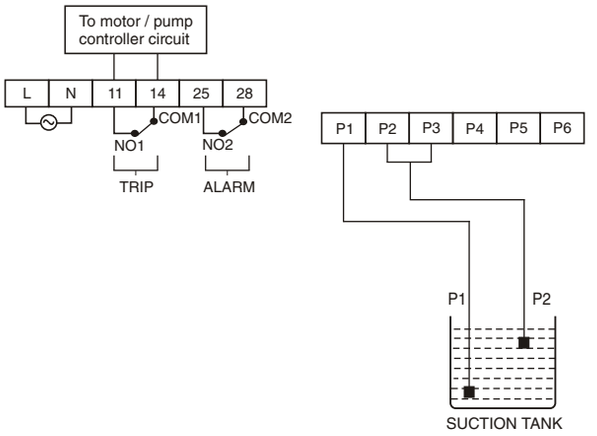


■ TERMINAL CONNECTION



S - Suction
D - Delivery

SINGLE TANK SINGLE LEVEL_SUCTION LOGIC

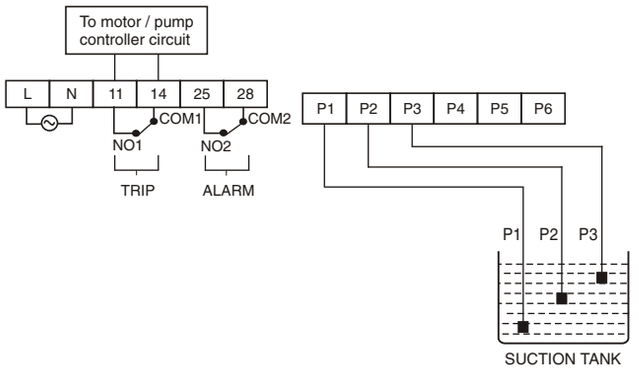


NOTE :
- P4, P5 & P6 are not connected.
- Sensor P3 is shorted with sensor P2, to act as single level measurement sensor.

TESTING CHART

Sr. No.	P1	P2= P2+P3	Trip Status	Alarm Status	LED1	LED2	LED3	LED4
					Power ON	Suction	Delivery	Relay
1	IN	OUT	OFF	ON	ON	Fast Blinking	OFF	OFF
2	IN	IN	ON	ON	ON	ON	OFF	ON

SINGLE TANK TWO LEVEL_SUCTION LOGIC

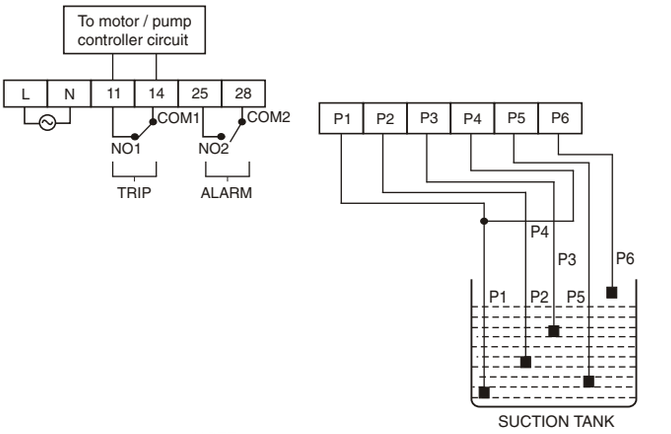


NOTE :
- P4, P5 & P6 are not connected.
- Measurement is done with sensor P2 & P3 for different liquid levels, considering P1 as reference.

TESTING CHART

Sr.No.	P1	SENSOR CONDITION		Trip Status	Alarm Status	LED1	LED2	LED3	LED4
		P2	P3			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	OFF	ON	ON	Fast Blinking	OFF	OFF
2	IN	IN	OUT	OFF	ON	ON	Slow Blinking	OFF	OFF
3	IN	IN	IN	ON	ON	ON	ON	OFF	ON
4	IN	IN	OUT	ON	ON	ON	Slow Blinking	OFF	ON
5	IN	OUT	OUT	OFF	ON	ON	Fast Blinking	OFF	OFF

SINGLE TANK TWO LEVEL_SUCTION LOGIC (with alarm)

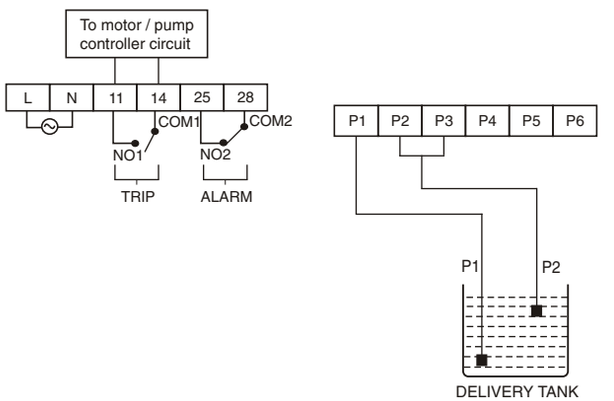


NOTE :
- Sensor P1+P4 are shorted so as to act as single reference.
- Sensor P5 & P6 are considered to indicate alarm condition.
- Measurement is done with sensor P2 & P3 for different level indication.

TESTING CHART

Sr.No.	P1= P1+P4	SENSOR CONDITION				Trip Status	Alarm Status	LED1	LED2	LED3	LED4
		P2	P3	P5	P6			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	OUT	OUT	OFF	ON	ON	Fast Blinking	OFF	OFF
2	IN	OUT	OUT	IN	OUT	OFF	OFF	ON	Fast Blinking	OFF	OFF
3	IN	IN	OUT	IN	OUT	OFF	OFF	ON	Slow Blinking	OFF	OFF
4	IN	IN	IN	IN	OUT	ON	OFF	ON	ON	OFF	ON
5	IN	IN	IN	IN	IN	ON	ON	ON	ON	OFF	ON
6	IN	IN	IN	IN	OUT	ON	OFF	ON	ON	OFF	ON
7	IN	IN	OUT	IN	OUT	ON	OFF	ON	Slow Blinking	OFF	ON
8	IN	OUT	OUT	IN	OUT	OFF	OFF	ON	Fast Blinking	OFF	OFF
9	IN	OUT	OUT	OUT	OUT	OFF	ON	ON	Fast Blinking	OFF	OFF

SINGLE TANK SINGLE LEVEL_DELIVERY LOGIC

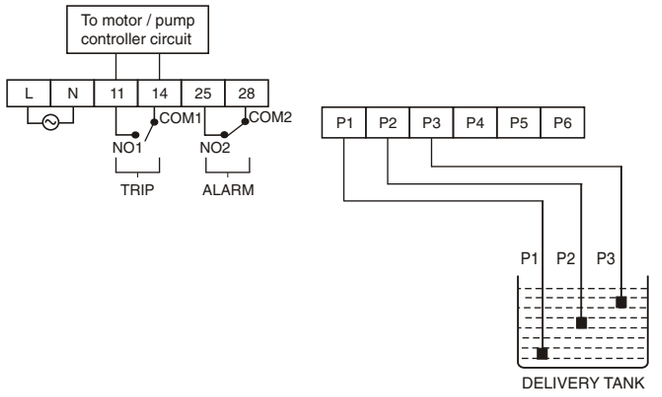


NOTE :
- Sensors P4, P5 & P6 are not connected.
- Sensor P3 is shorted with sensor P2,to act as single level measurement sensor.

TESTING CHART

Sr. No.	P1	P2= P2+P3	Trip Status	Alarm Status	LED1	LED2	LED3	LED4
					Power ON	Suction	Delivery	Relay
1	IN	OUT	ON	ON	ON	OFF	Fast Blinking	ON
2	IN	IN	OFF	ON	ON	OFF	ON	OFF

SINGLE TANK TWO LEVEL_DELIVERY LOGIC

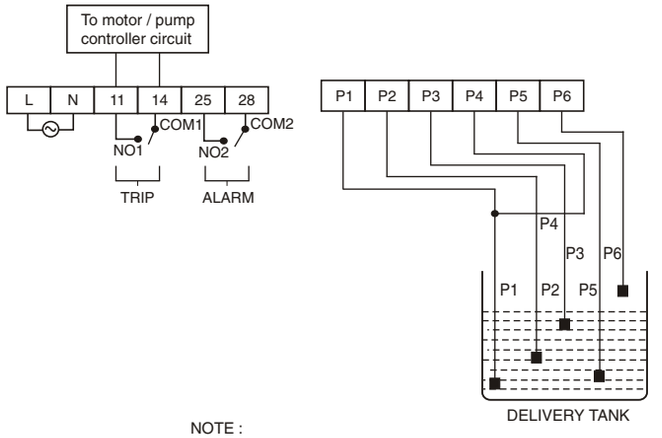


NOTE :
- P4, P5 & P6 are not connected.
- Measurement is done with sensor P2 & P3 for different liquid levels, considering P1 as reference.

TESTING CHART

Sr.No.	P1	SENSOR CONDITION		Trip Status	Alarm Status	LED1	LED2	LED3	LED4
		P2	P3			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	ON	ON	ON	OFF	Fast Blinking	ON
2	IN	IN	OUT	ON	ON	ON	OFF	Slow Blinking	ON
3	IN	IN	IN	OFF	ON	ON	OFF	ON	OFF
4	IN	IN	OUT	OFF	ON	ON	OFF	Slow Blinking	OFF
5	IN	OUT	OUT	ON	ON	ON	OFF	Fast Blinking	ON

SINGLE TANK TWO LEVEL_DELIVERY LOGIC (with alarm)

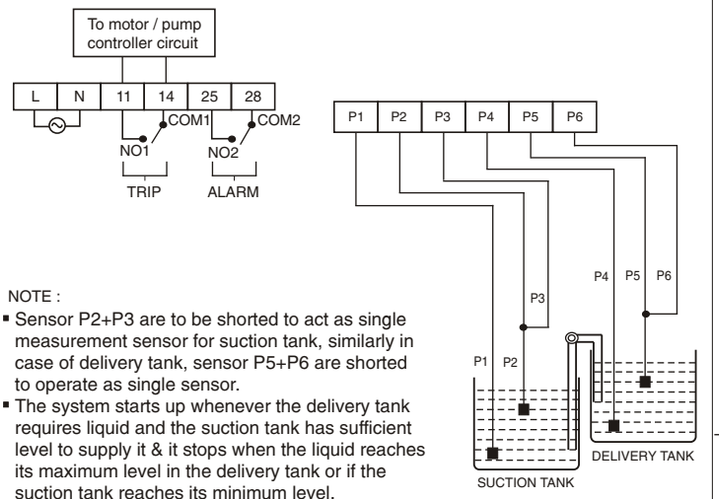


NOTE :
- Sensor P1+P4 are shorted so as to act as single reference.
- Sensor P5 & P6 are considered to indicate alarm condition. Measurement is done with sensor P2 & P3 for different level indication.

TESTING CHART

Sr. No.	P1= P1+P4	SENSOR CONDITION				Trip Status	Alarm Status	LED1	LED2	LED3	LED4
		P2	P3	P5	P6			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	OUT	OUT	ON	ON	ON	OFF	Fast Blinking	ON
2	IN	OUT	OUT	IN	OUT	ON	OFF	ON	OFF	Fast Blinking	ON
3	IN	IN	OUT	IN	OUT	ON	OFF	ON	OFF	Slow Blinking	ON
4	IN	IN	IN	IN	OUT	OFF	OFF	ON	OFF	ON	OFF
5	IN	IN	IN	IN	IN	OFF	ON	ON	OFF	ON	OFF
6	IN	IN	IN	IN	OUT	OFF	OFF	ON	OFF	ON	OFF
7	IN	IN	OUT	IN	OUT	OFF	OFF	ON	OFF	Slow Blinking	OFF
8	IN	OUT	OUT	IN	OUT	ON	OFF	ON	OFF	Fast Blinking	ON
9	IN	OUT	OUT	OUT	OUT	ON	ON	ON	OFF	Fast Blinking	ON

TWO TANK SINGLE LEVEL

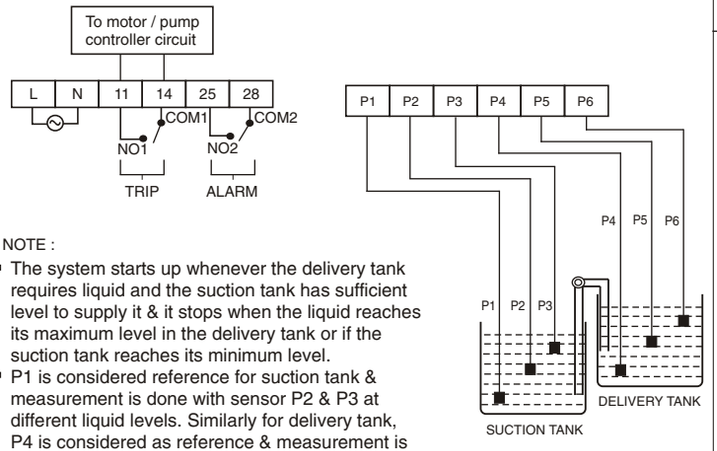


NOTE :
- Sensor P2+P3 are to be shorted to act as single measurement sensor for suction tank, similarly in case of delivery tank, sensor P5+P6 are shorted to operate as single sensor.
- The system starts up whenever the delivery tank requires liquid and the suction tank has sufficient level to supply it & it stops when the liquid reaches its maximum level in the delivery tank or if the suction tank reaches its minimum level.

TESTING CHART

Sr. No.	SENSOR CONDITION				Trip Status	Alarm Status	LED1	LED2	LED3	LED4
	P1 (Ref1)	P2= P2+P3	P4 (Ref2)	P5= P5+P6			Power ON	Suction	Delivery	Relay
1	IN	OUT	IN	OUT	OFF	OFF	ON	Fast Blinking	Fast Blinking	OFF
2	IN	IN	IN	OUT	ON	OFF	ON	ON	Fast Blinking	ON
3	IN	IN	IN	IN	OFF	OFF	ON	ON	ON	OFF
4	IN	OUT	IN	IN	OFF	OFF	ON	Fast Blinking	ON	OFF

TWO TANK TWO LEVEL



NOTE :
- The system starts up whenever the delivery tank requires liquid and the suction tank has sufficient level to supply it & it stops when the liquid reaches its maximum level in the delivery tank or if the suction tank reaches its minimum level.
- P1 is considered reference for suction tank & measurement is done with sensor P2 & P3 at different liquid levels. Similarly for delivery tank, P4 is considered as reference & measurement is done with sensor P5 & P6 at different liquid levels.

TESTING CHART

Sr. No.	SUCTION / DELIVERY SENSOR CONDITION						Trip Status	Alarm Status	LED1	LED2	LED3	LED4
	P1 (Ref1)	P2	P3	P4 (Ref2)	P5	P6			Power ON	Suction	Delivery	Relay
1	IN	OUT	OUT	IN	OUT	OUT	OFF	OFF	ON	Fast Blinking	Fast Blinking	OFF
2	IN	IN	OUT	IN	OUT	OUT	OFF	OFF	ON	Slow Blinking	Fast Blinking	OFF
3	IN	IN	IN	IN	OUT	OUT	ON	OFF	ON	ON	Fast Blinking	ON
4	IN	IN	OUT	IN	IN	OUT	ON	OFF	ON	Slow Blinking	Slow Blinking	ON
5	IN	IN	IN	IN	IN	OUT	ON	OFF	ON	ON	Slow Blinking	ON
6	IN	IN	IN	IN	IN	IN	OFF	OFF	ON	ON	ON	OFF
7	IN	IN	OUT	IN	IN	IN	OFF	OFF	ON	Slow Blinking	ON	OFF
8	IN	OUT	OUT	IN	IN	IN	OFF	OFF	ON	Fast Blinking	ON	OFF
9	IN	OUT	OUT	IN	IN	OUT	OFF	OFF	ON	Fast Blinking	Slow Blinking	OFF

Manual Start Switch:
If water level in lower tank is greater than low level & water level in upper tank is below high level then by pressing a switch, relay can be switched ON manually.

SAFETY PRECAUTIONS

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If the equipment is not used in a manner specified by the manufacturer it might impair the protection provided by the equipment.

If there is physical damage to the unit then do not use it.

Read complete instructions prior to installation and operation of the unit.

CAUTION

1) Ensure the connection as per terminal diagram.
2) To be handled only by authorized and technical person.
3) Do not install any heat sources like burner, electric arc, etc near unit.
4) Install as near to the starter as possible.
5) The sensor prods are suspended from the top opening of the water tank in a suitable PVC conduct piping. Metal pipes should not be used.
6) The sensor prods should not be wall mounted on metallic water tank.

WARRANTY / LIMITATIONS OF LIABILITY

Selec warrants the products to be free from defects in the materials and workmanship for a period of one year (or other period specified, if any) from the date of sale by Selec.

The warranty does not apply to defects resulting from any action of the buyer, including but not limited to improper handling, operating the product outside the specification limits or unauthorized disassembling / altering of the product. The warranty shall be VOID if the product shows evidence of having been tampered or being damaged due to usage in corrosive environment ; or current, heat, moisture or vibration ; improper specification wrong usage in an application; misuse or other operating conditions outside of Selec's control.

Selec shall not be responsible for special, indirect or consequential damages, loss of profits or commercial loss in any way connected with the products, whether such claim is based on contract, warranty, negligence or strict liability.

In no event shall the responsibility of Selec for any act exceed the individual price of the product on which liability is asserted.

In no event shall Selec be responsible for warranty or other claims regarding the products unless Selec's analysis confirms that the products were properly handled, stored, installed and maintained and not subjected to contamination, abuse, misuse or inappropriate modification or repair.

ORDER CODE INFORMATION

PRODUCT	SUPPLY	CERTIFICATION	
		CE	c UL us LISTED
WLCA-2M-U-CE	85 – 270V AC/DC	▪	—

(Specifications are subject to change, since development is a continuous process.)

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