

# DESIGN ENVELOPE IPC 9521 | TECHNICAL OVERVIEW

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## DESIGN ENVELOPE IPC 9521

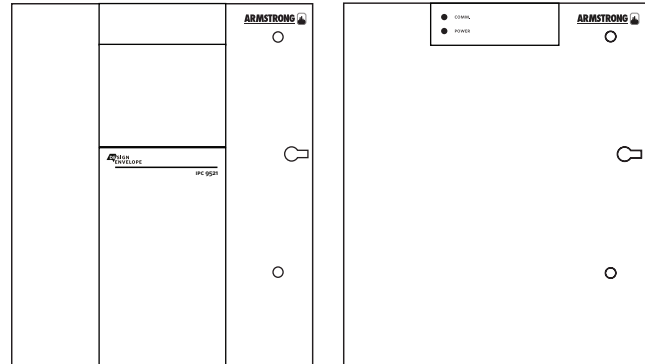
### WATER COOLED CHILLED WATER PLANT CONTROL SYSTEM

The Armstrong IPC 9521 is a pre-programmed control system, designed for the automation of a water cooled variable primary chiller plant. The IPC 9521 sequences the chillers and optimizes the pump operation for better efficiency of your chiller plant. The controller is fully field configurable through on-board set up screens. This plant automation solution can also be seamlessly integrated with the reporting and remote read-write capabilities of any building management system.

The IPC 9521 is capable of automating a chiller plant with up to five water cooled chillers, five variable speed primary pumps, five condenser pumps and five cooling Towers in a number of configuration.

The IPC 9521 offers four options for determining the buildings cooling requirements:

- Parallel Sensorless™ for headered Design Envelope pumps
- or remote Zone differential Pressure (dP) sensors (up to 5 zones)
- or remote Zone Temperature sensors (up to 5 zones)
- or local plant dP sensor with simulated quadratic control curve



### STAND ALONE

POWER SUPPLY: 100V-240V AC / 50-60 HZ

### IPC 9521 FEATURE MATRIX:

MODEL	SCREEN	ENCLOSURE	OPERATING FOR	AVAILABLE FOR	
IPC9521	10" PC Touch screen and web-based access screens	Indoor installation <ul style="list-style-type: none"> <li>• NEMA 12</li> <li>• IP54</li> </ul> Outdoor installation <ul style="list-style-type: none"> <li>• NEMA 4X</li> <li>• IP55</li> </ul>	Water Cooled Chiller	Quantity	<ul style="list-style-type: none"> <li>• 1 to 5 (identical sizes)</li> </ul>
				Interface Or Hardwired	<ul style="list-style-type: none"> <li>• Modbus RTU</li> <li>• Bacnet MS/TP</li> <li>• Bacnet IP</li> <li>• Lonworks</li> <li>• Hardwired 0-10V</li> <li>• Hardwired 4-20 mA</li> </ul>
			Primary and Condenser Pumps	Quantity	<ul style="list-style-type: none"> <li>• 1 to 5 (identical sizes)</li> </ul>
				Configuration	<ul style="list-style-type: none"> <li>• Headered or dedicated</li> </ul>
				Type	<ul style="list-style-type: none"> <li>• Single</li> <li>• DualArm</li> <li>• Twin</li> </ul>
			Cooling Tower	Communication(standard)	<ul style="list-style-type: none"> <li>• Modbus RTU with the vFDS</li> </ul>
				Quantity	<ul style="list-style-type: none"> <li>• 1 to 5 (identical sizes)</li> </ul>
				Configuration	<ul style="list-style-type: none"> <li>• Headered</li> </ul>
			BAS	Communication(standard)	<ul style="list-style-type: none"> <li>• Modbus RTU with the Fan vFD</li> </ul>
				Communication Protocol (Optional)	<ul style="list-style-type: none"> <li>• Modbus RTU</li> <li>• Bacnet MS/TP</li> <li>• Bacnet IP</li> <li>• Lonworks</li> </ul>

**IPC 9521 CAPABILITY:**

APPLICATION		CONTROL OPTIONS	
Variable primary system	Building cooling demand logic	Sensorless™ with Design Envelope pumps	With field adjustable set-point reset based on the most open valve position (as per ASHRAE 90.1).
		Or Zone dP sensor	
		Or Local plant dP sensor	
		Or Zone return temperature sensor	
	Chilled water plant data points	Plant supply and return temperature	
		Chilled water plant flow	
		Chiller power (kW electric)	
		Bypass valve control to continue operation at very low load	
	PC Touch screen easy display	Plant overview with a multi-color schematic active display of mechanical room hydronic circuit indicating operating status. <ul style="list-style-type: none"> <li>▪ Multi-language</li> <li>▪ Zone set up</li> <li>▪ Pump configuration</li> <li>▪ Alarm history and event review</li> <li>▪ Zones, pumps and event status</li> <li>▪ Hand-Off-Auto control</li> </ul>	
	Variable primary + Variable secondary system	Secondary pump pony panel available	<ul style="list-style-type: none"> <li>▪ IPS 3000 (in available markets)</li> <li>▪ IPS 4000</li> <li>▪ Parallel Sensorless™ pump control</li> <li>▪ Building side flow signals or building supply temperature signal on secondary circuit</li> </ul>

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