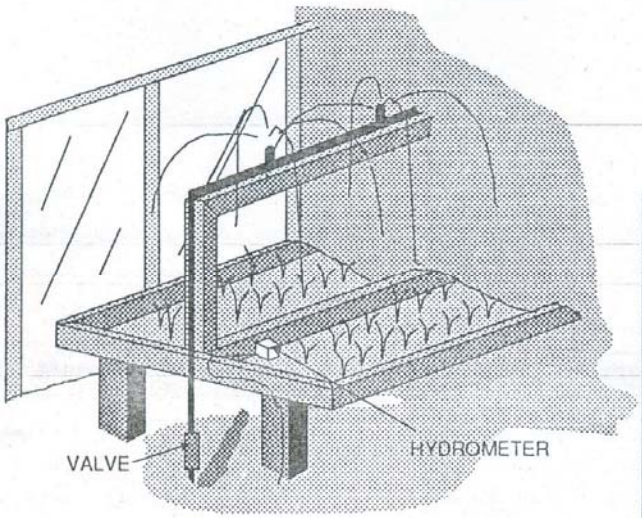
4.13 Who Wants Water?

Watering produce grown in a garden can be a messy, wet experience. Not to mention a little tedious if it has to be carried out everyday. It would seem that this is in need of some form of automation, especially if the size of the area to be watered is on a large commercial scale.



DEVICE	PC DEVICE	DESCRIPTION
HYDRO-METER	X000	MOISTURE SENSOR INPUTS PULSES TO COUNTER C235 VIA X000.
VALVE	Y001	DRIVE OUTPUT TO SET VALVE POSITION
	C235	PROPORTIONAL VALUE OF MOISTURE CONTENT OF SOIL - FROM HYDROMETER.
	T000	TIME DURATION FOR SAMPLING AND WATERING - NEEDS TO BE SET FOR LOCAL CONDITIONS
	D017	PROPORTIONAL VALVE SETTING
	M8000	INTERNAL PC RUN FLAG
(D)ZCP	FNC 11	THE ZCP APPLIED INSTRUCTION
MOV	FNC 12	THE MOV APPLIED INSTRUCTION
PWM	FNC 58	THE PWM APPLIED INSTRUCTION

Description;

When most engineers think of watering their garden, they drag out the hose, connect it to their kitchen tap and splash a bit of water around! This would be disastrous in a commercial situation. Care must be taken not to over water or under water produce. There are problems with watering if watering takes place when the sunlight is still strong as it 'burns' the produce. Delicate flower blooms can be damaged by aggressive watering etc. All of these factors and more need to be taken into account when designing an automated watering system.

The example detailed on this sheet checks the moisture content of the soil around the plant's roots. This data is conveyed back to the PC through its high speed counter input X000. The condition of the soil will dictate how much volume of water will be sprinkled or sprayed. The PWM instruction could be used to set how much a valve is opened or in this case how fast and hence how much pressure the water is pumped out with. The pumping cycle take place over a timed duration set by the timer T000.

The reset of the valve to its original position could be by a further output or as in this case the valve has a spring return. Hence, no drive output causes the valve to reset , i.e. close.