



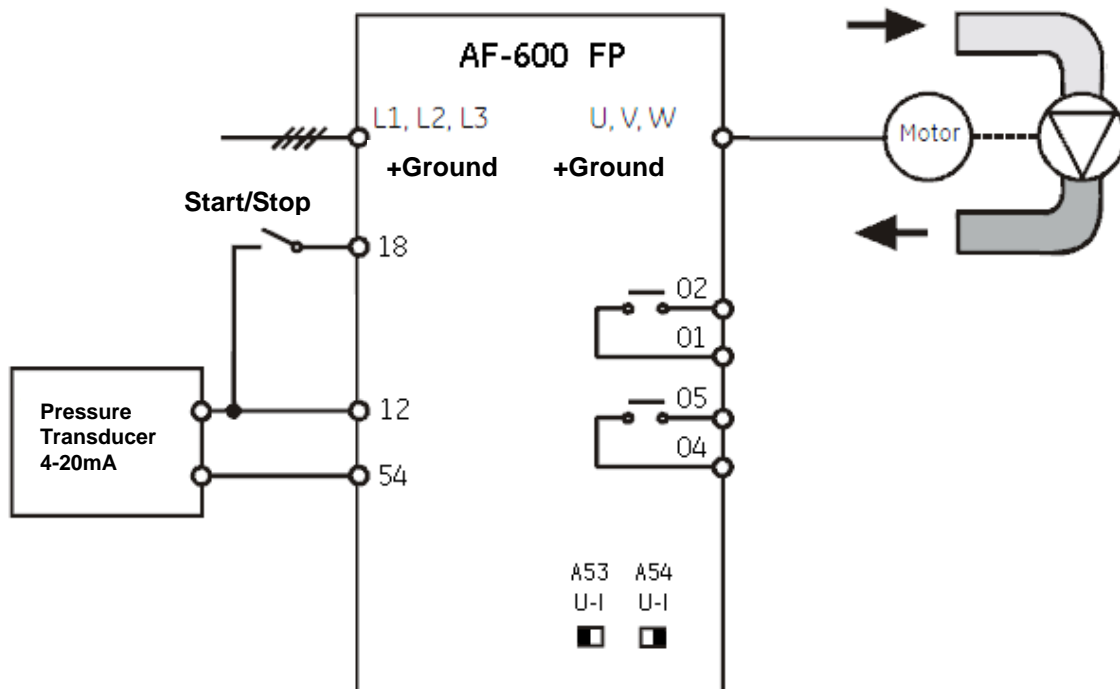
AF-600 FP - MULTI-PUMP CONTROL WITHOUT ROTATION

The multi-pump control is a system designed to keep a constant pressure inside the pipeline, independently of the fluctuations of the demand. The pressure inside the pipeline has to be constant according the input reference from the PID of AF-600FP.

A pressure transducer provides real pressure as feedback signal and the speed drive regulates the speed of the main pump and it can control the enabling/disabling of auxiliary pumps.

The standard AF-600 FP version can control up to 3 pumps without rotation of the main pump (1 main and 2 auxiliaries). The operation of the auxiliary pump is controlled by the PID. If it is required additional pumps, AF-600 FP can include optional card to control as total of 5 auxiliary pumps and 1 main pump.

Wiring Diagram



Select input terminal 54 as analog input via Dip Switch A54 for Current

OFF	ON	Signal
V*	I	54 Voltage/Current.

Dip Switch A54



*By default



PROGRAMMING

SETTINGS				
Parameters		Value	Units	Remarks
Language	K-01=	-	-	Select your country language
Regional settings	K-03=	0	-	International
Display line 1.2 Small	K-21=	1252	-	Display feedback in units
Configuration mode	H-40=	3	-	Closed loop (PID control ON)
Frequency setting 1	F-01=	0	-	No function
Acceleration ramp	F-07=	10	s	Ramp up to 10 seconds
Deceleration ramp	F-08=	10	s	Ramp down to 10 seconds
Frequency Upper limit	F-15=	50	Hz	Maximum frequency of the pump
Frequency Lower limit	F-16=	35	Hz	Minimum frequency of the pump
Reference/Feedback unit	CL-12=	71	-	Bars (Pressure)
Transducer minimum pressure	CL-13=	0	Bar	According Transducer (example: 0 Bar)
Transducer maximum pressure	CL-14=	10	Bar	According Transducer (example: 10 Bar)
Pressure as Set point	CL-21=	5	Bar	According Customer (example: 5 Bar)
Time limit as active zero	AN-00=	5	s	Time of terminal 54 : 2mA or less
Function active zero	AN-01=	5	-	Current of terminal 54 : 2mA or less
Minimum current of transducer	AN-22=	4	mA	According Transducer
Maximum current of transducer	AN-23=	20	mA	According Transducer
Minimum range of transducer	AN-24=	0	Bar	4mA = 0 bars (equivalence)
Maximum range of transducer	AN-25=	10	Bar	20mA = 10 bars (equivalence)
Low speed detection	AP-22=	1	-	Enable
Function No Flow	AP-23=	1	-	Sleep
Sleep mode delay	AP-24=	3	s	Waiting time to go to Sleep mode
Minimum time of operation	AP-40=	10	s	Minimum operation time after wake-up
Minimum time of Sleep	AP-41=	3	s	Minimum waiting time to wake up
Minimum starting pressure	AP-44=	20	%	Minimum starting pressure = 4 Bar (% depending of set point CL-21) (hysteresis)

Programming as default (modification only if requested by user)

SETTINGS				
Parameters		Value	Units	Remarks
Unidad de velocidad de motor	K-02=	1	-	Hz
Intensidad Motor	P-03=	x	A	According Motor plate
Velocidad Motor	P-06=	x	rpm	According Motor plate
Potencia Motor	P-07=	x	kW	According Motor plate
Frecuencia Motor	F-04=	50	Hz	According Motor plate
Tensión Motor	F-05=	400	V	According Motor plate
Ganancia Proporcional (P)	CL-93=	0,50	-	Proportional Gain (P)
Constante Integral (I)	CL-94=	20,00	s	Integral Constant (I)