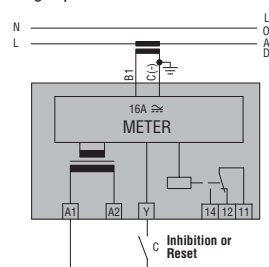


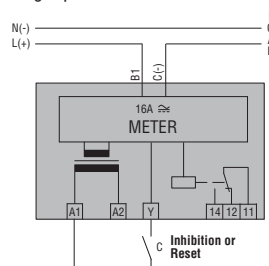
### Current monitoring relay for 1-phase systems

#### PMA20

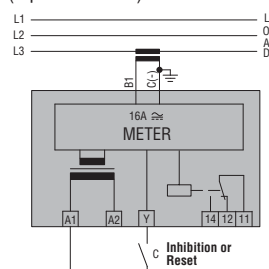
##### Single-phase connection with CT



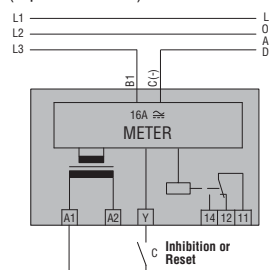
##### Single-phase direct connection



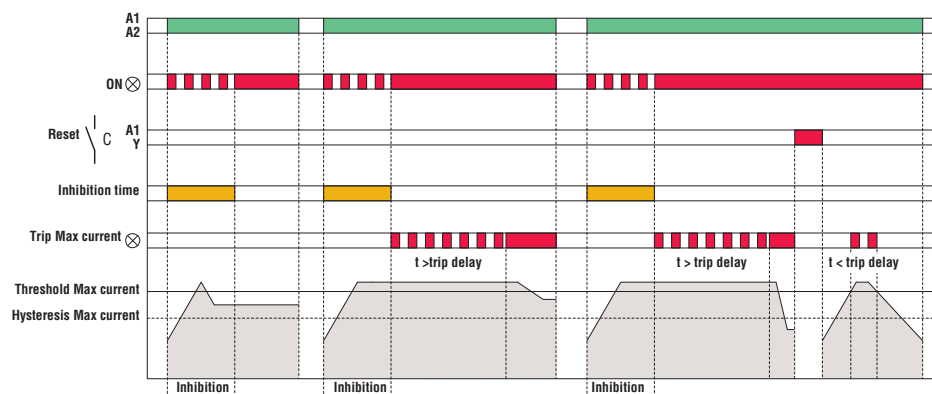
##### Three-phase connection with CT (1 phase control)



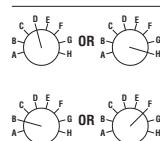
##### Three-phase direct connection (1 phase control)



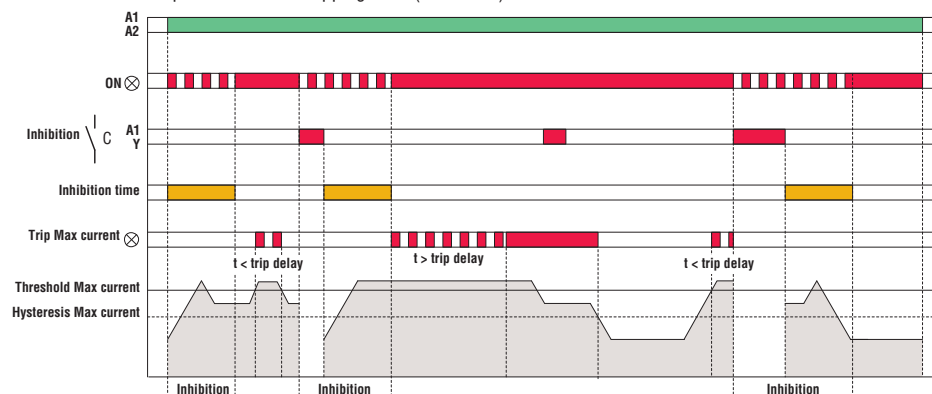
#### Operation with tripping latch (Latch ON)



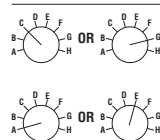
#### Positions



#### Operation with no tripping latch (Latch OFF)



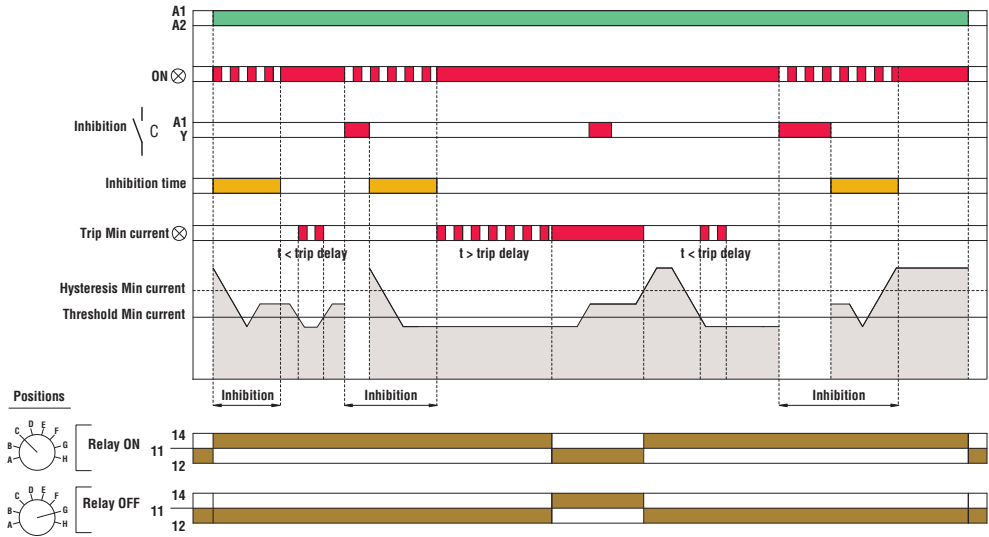
#### Positions



Operation			
Mode	Ie	Relay output	Latch
A	5A	OFF	OFF
B		ON	ON
C		OFF	OFF
D	16A	ON	ON
E		OFF	OFF
F		ON	ON
G		OFF	OFF
H		ON	ON



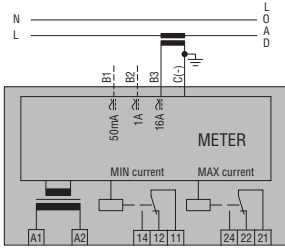
### Minimum current control operation with no tripping latch (Latch OFF)



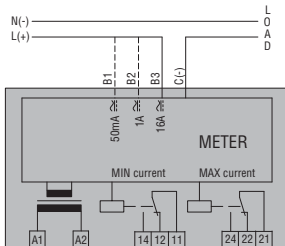
### Current monitoring relay for 1-phase systems

**PMA40**

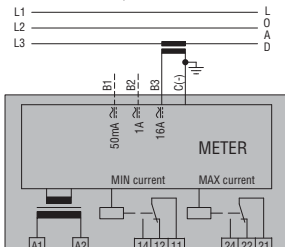
#### Single-phase connection by CT



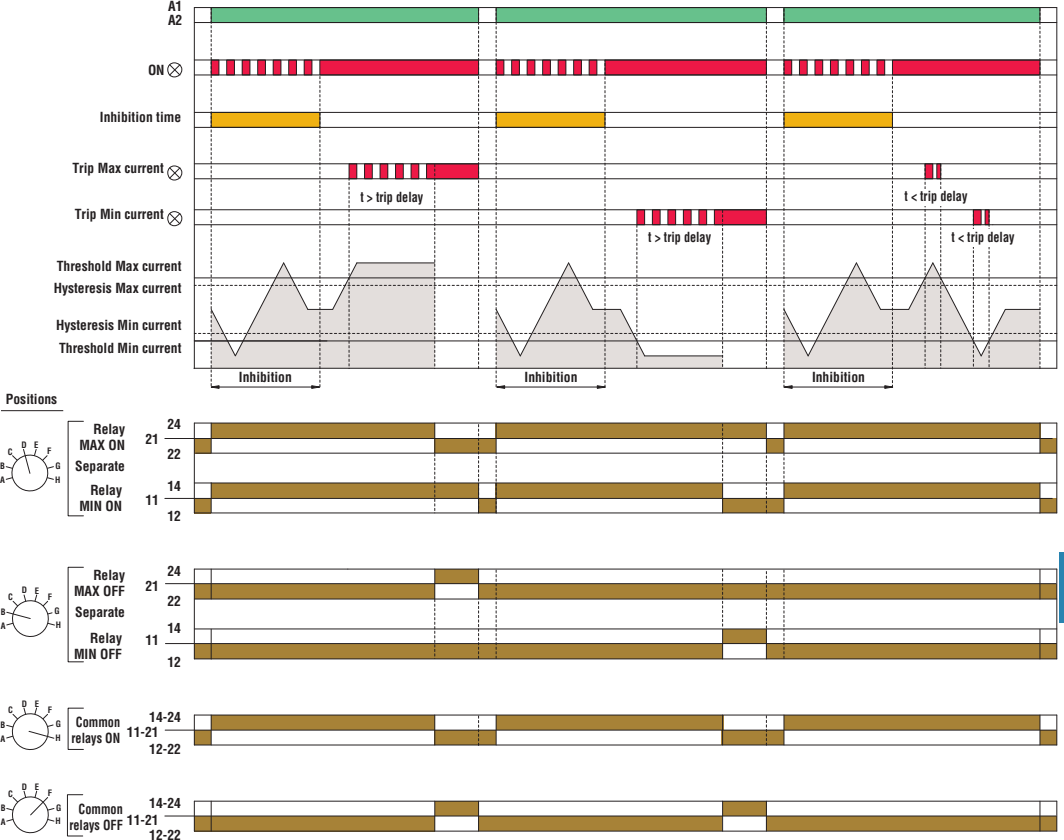
#### Single-phase direct connection



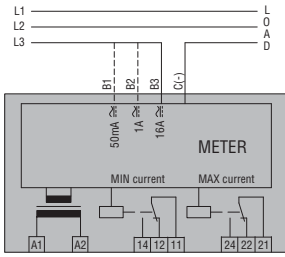
#### Three-phase connection by CT (1 phase control)



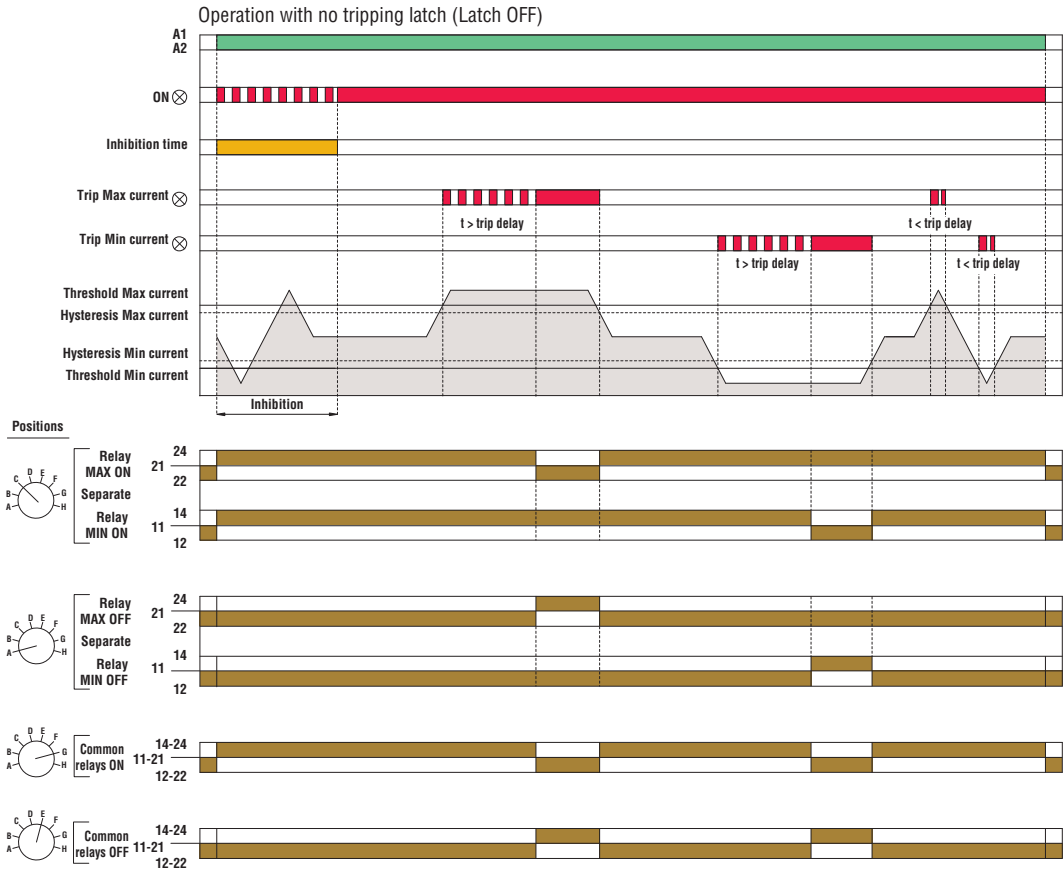
### Operation with tripping latch (Latch ON)



### Three-phase direct connection (1 phase control)



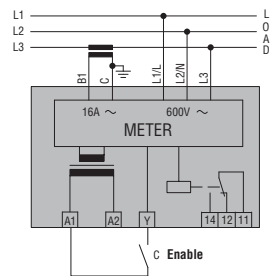
Operation			
Mode	Operation	Relay output	Latch
A	Separate relays	OFF	OFF
B		ON	ON
C		ON	ON
D	Common relays	OFF	OFF
E		ON	ON
F		ON	ON
G		OFF	OFF
H		ON	ON



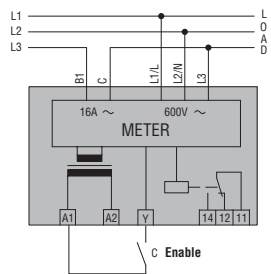
### Pump protection - motor under-load/over-current monitoring

PMA50

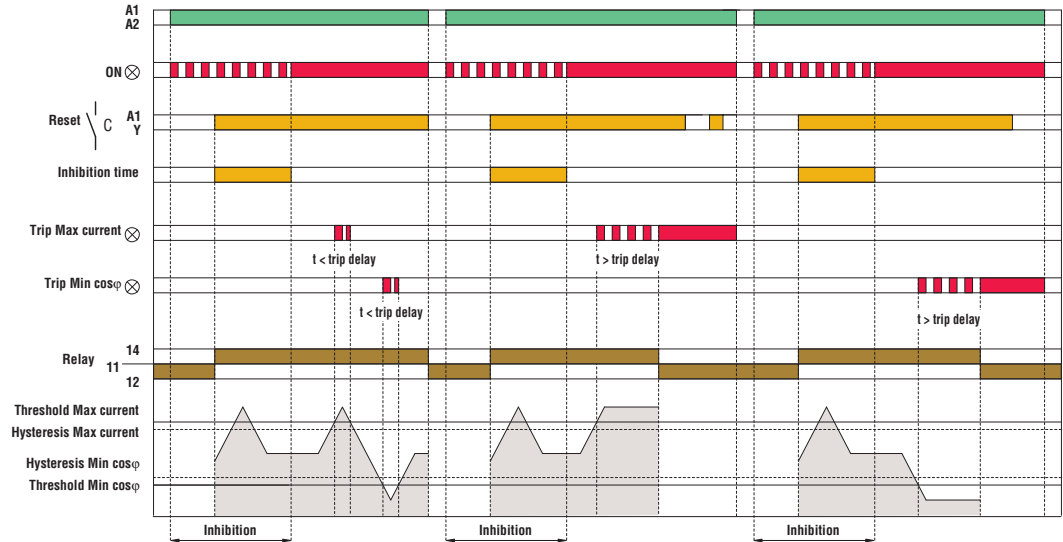
### Three-phase connection by CT



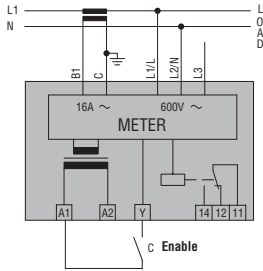
### Three-phase direct connection



### External reset disabled (OFF)

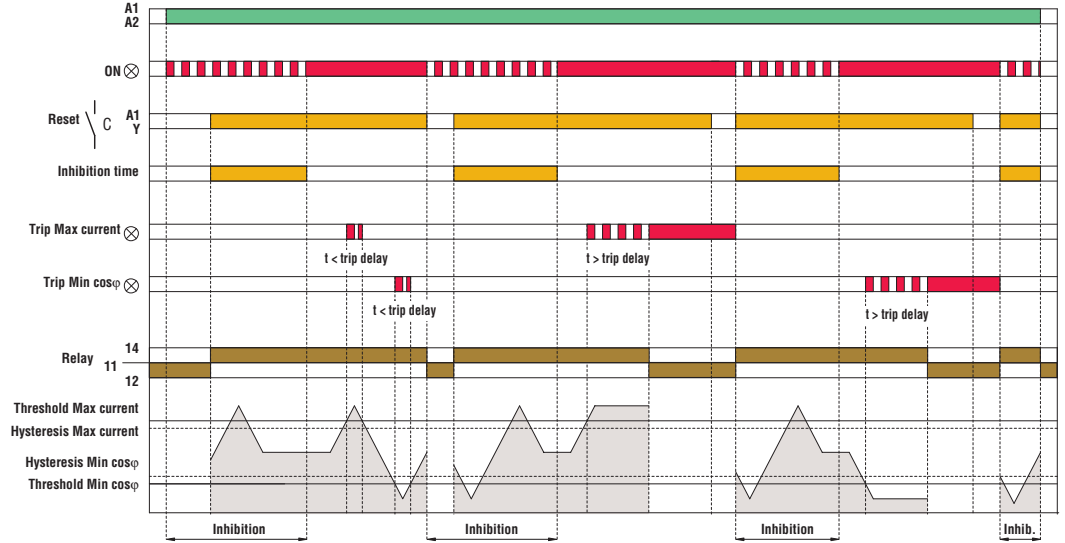


### Single-phase connection by CT



Operation			
Mode	Ie	Connection	External reset
A	5A	1 phase	OFF
B		3 phase	ON
C			OFF
D	16A	1 phase	ON
E		3 phase	OFF
F			ON
H			

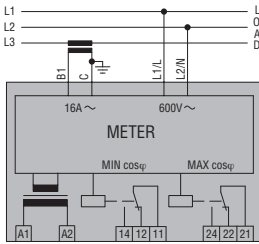
### External reset enabled (ON)



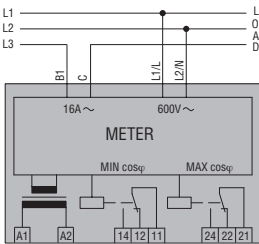
### Phase shift monitoring relay

#### PMA60

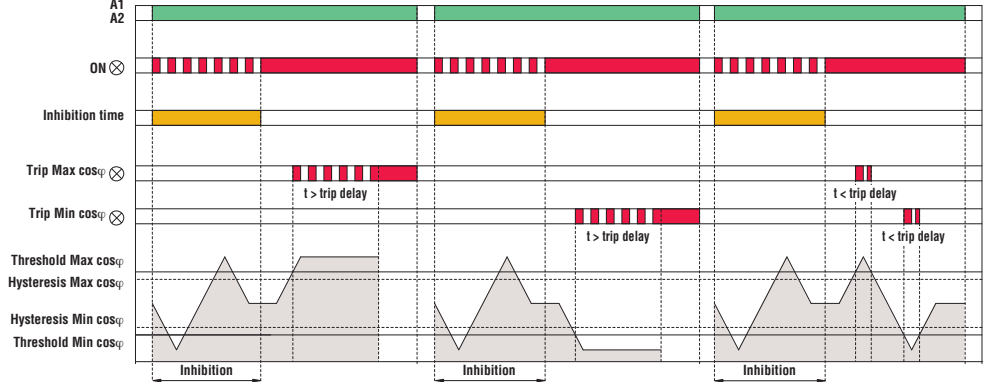
### Three-phase connection by CT



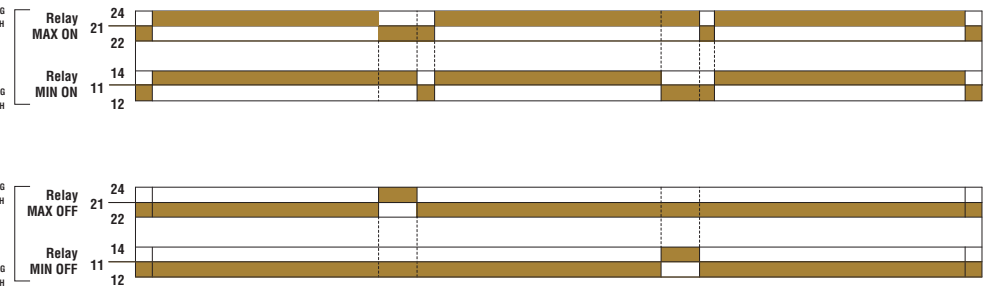
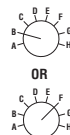
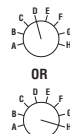
### Three-phase direct connection



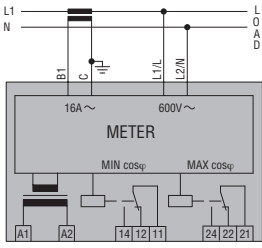
### Operation with tripping latch (Latch ON)



### Positions

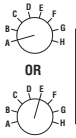
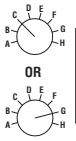


### Single-phase connection by CT

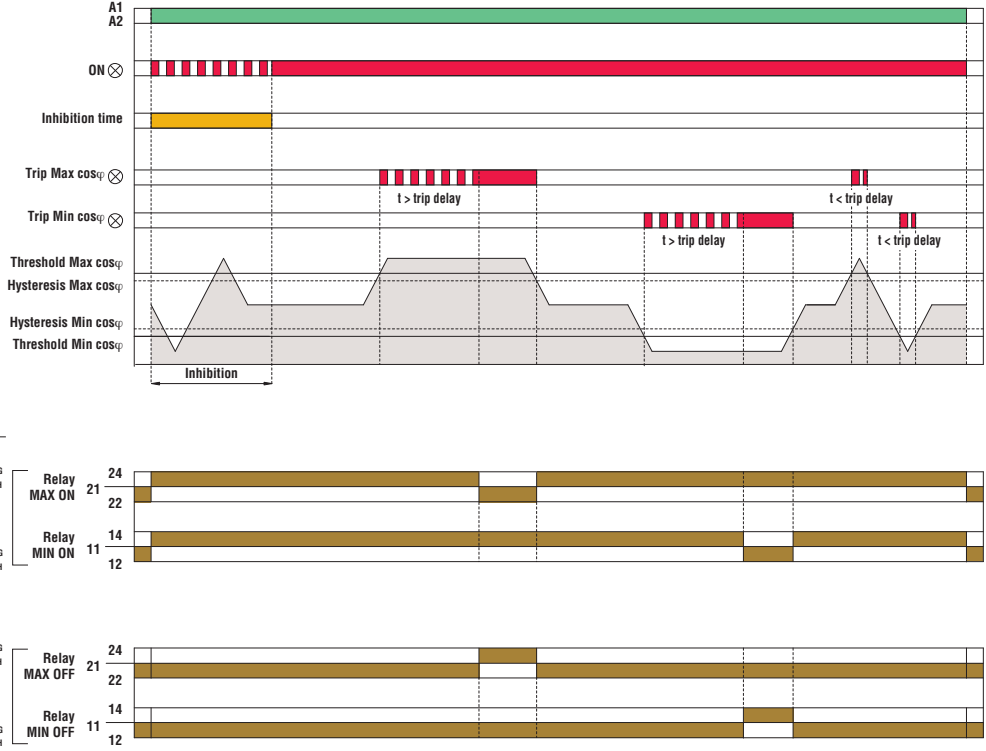


Operation			
Mode	Connection	Relay output	Latch
A	1 phase	OFF	OFF
B		ON	ON
C		ON	OFF
D		ON	ON
E	3 phase	OFF	OFF
F		ON	ON
G		ON	OFF
H		ON	ON

#### Positions

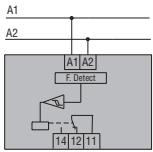


### Operation with no tripping latch (Latch OFF)

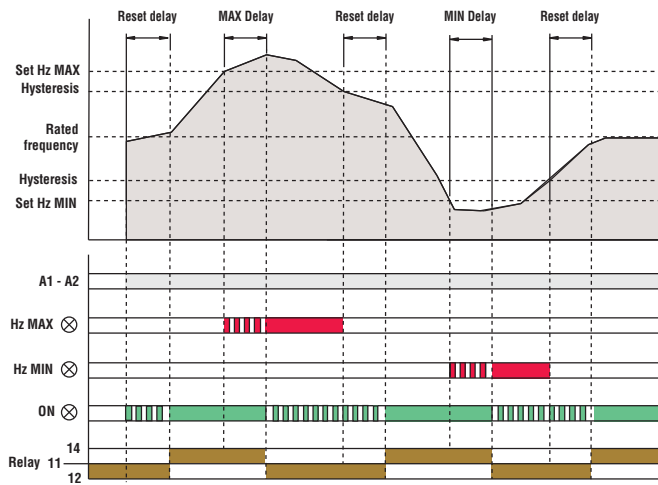


### Frequency monitoring relay

#### PMF20



#### MAX-MIN, MAX or MIN function



#### MAX function

