

% Assumption: low and high alarm hysteresis regions do not overlap

```
HIGH_LIMIT: TYPE = [ l: [tick -> real], eps: [tick -> real] ->
                     { h: timed_real | FORALL (t: tick): h(t) - eps(t) > l(t) + eps(t) } ]
```

% Inputs

```
X, L      : VAR [tick -> real]
EPS       : VAR [tick -> posreal]
H         : VAR HIGH_LIMIT
```

% Outputs

```
QH, Q, QL : VAR [tick -> bool]
```

```
LIMITS_ALARM_fbd_impl (X, H, L, EPS, QH, Q, QL): bool =
  EXISTS (w1: [tick -> posreal]), (w2, w3: [tick -> real]):
    DIV(EPS, (LAMBDA (t: tick): 2.0), w1)
    & SUB(H(L, EPS), w1, w2)
    & ADD(L, w1, w3)
    & HYSTERESIS_tab_req(X, w2, w1, QH)
    & HYSTERESIS_tab_req(w3, x, w1, QL)
    & DISJ(QH, QL, Q)
```