```cpp
// pid.cpp: Source file for pid and all of it's assets
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//
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#include "../include/pid.hpp"

int sgn(float __x);

namespace pid {
  float Kp              = 0.8;
  float Ki              = 0.04;
  float Kd              = 0.35;
  unsigned int deadband = 10;

  bool enabled[2]                = {true, true};
  unsigned int default_precision = 30;
  TaskHandle pidHandle;

  void pos_t::request() {
    sensors::left.request  = left;
    sensors::right.request = right;
  }

  pos_t::pos_t(long left, long right) : left(left), right(right) {
  }

  bool pos_t::operator=(pos_t pos) {
    return left == pos.left && right == pos.right;
  }

  pos_t pos_t::operator+(pid::pos_t pos) {
    return pos_t(left + pos.left, right + pos.right);
  }
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pos_t pos_t::operator-(pid::pos_t pos) {
  return pos_t(left - pos.left, right - pos.right);
}

void controller(void* none) {
  float current[2];
  float error[2];
  float lastError[2] = {0, 0};
  float integral[2]  = {0, 0};
  float derivative[2];
  float power[2];

  sensors::left.reset();
  sensors::right.reset();
  sensors::quad_t* sides[2] = {&sensors::left, &sensors::right};

  while (true) {
    printf("| %ld | %ld |\n", sensors::left.value(), sensors::right.value());
    for (size_t i = 0; i < 2; i++) {
      if (enabled[i]) {
        current[i] = sides[i]->value();
        error[i]   = sides[i]->request - current[i];
        if ((unsigned int)abs((int)error[i]) <= deadband) {
          continue;
        }
        integral[i] = (Ki != 0 && abs((int)error[i]) < INTEGRAL_LIMIT)
                        ? (integral[i] + error[i])
                        : 0;
        derivative[i] = error[i] - lastError[i];
        lastError[i]  = error[i];
        power[i] =
            (Kp * error[i]) + (Ki * integral[i]) + (Kd * derivative[i]);
        power[i] = (power[i] <= DRIVE_MIN)
                       ? DRIVE_MIN
                       : ((power[i] >= DRIVE_MAX) ? DRIVE_MAX : power[i]);
        power[i] *= 8.1f / powerLevelMain();
        (i == 0) ? drive::left.set(power[i]) : drive::right.set(power[i]);
      }
    }
    delay(25);
  }
  free(none);
}

void enable(void) {
  enabled[0] = true;
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  enabled[1] = true;
}

void disable(void) {
  enabled[0] = false;
  enabled[1] = false;
}

void init(void) {
  pidHandle = taskCreate(controller, TASK_DEFAULT_STACK_SIZE, NULL,
                         TASK_PRIORITY_DEFAULT);
}

void stop(void) {
  taskSuspend(pidHandle);
}

void go(void) {
  taskResume(pidHandle);
}

pos_t get(void) {
  return pos_t(sensors::left.request, sensors::right.request);
}

void request(long l, long r) {
  sensors::left.request  = l;
  sensors::right.request = r;
}

void request(pos_t pos) {
  sensors::left.request  = pos.left;
  sensors::right.request = pos.right;
}

void wait(unsigned long precision, unsigned long blockTime) {
  if (blockTime > 0) {
    auto start = millis();
    while ((sensors::left.value() > sensors::left.request + precision ||
            sensors::left.value() < sensors::left.request - precision ||
            sensors::right.value() > sensors::right.request + precision ||
            sensors::right.value() < sensors::right.request - precision) &&
           millis() - start <= blockTime) {
      delay(50);
    }
  } else {
```

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      while ((sensors::left.value() > sensors::left.request + precision ||
              sensors::left.value() < sensors::left.request - precision ||
              sensors::right.value() > sensors::right.request + precision ||
              sensors::right.value() < sensors::right.request - precision)) {
        delay(50);
      }
    }
  }
} // namespace pid

int sgn(float __x) {
  if (__x > 0)
    return 1;
  if (__x < 0)
    return -1;
  return 0;
} // namespace pid
```